The London Herald was the first English newspaper to employ a war correspondent. This was Mr. George Borrow, who wrote of the Carlist fighting in Spain in 1839.

OVER SIX MILLIONS

Appalling Total of Germany's Casualties

Copenhagen, Wednesday.

The "Vorwaerts" learns from a reliable source that up to October 31 the German war casualties were as follows:—

Killed	1,580,000
Wounded	4,000,000
Missing	260,000
Prisoners	490,000

SHIPS SUNK LAST MONTH

Submarines Less Active; Only 177,000 Tons Destroyed

The Admiralty makes the following announcement:—

The losses of British, Allied, and Neutral merchant tonnage due to enemy action and marine risks during the month of October, 1918, compared with the preceding periods, are set out as below:—

	Gross Tonnage			
Period	British	Allied and Neutral	Total	
1917	Month	Month	Month	Quarter
Sept.	209,212	159,949	368,161	1,494,473
Oct.	283,973	197,364	487,337	
Nov.	196,550	135,893	333,443	
Dec.	296,355	155,707	452,063	1,272,843
1918				
Jan	218,621	140,842†	359,463†	
Feb.	254,303	130,629†	384,932†	
March	224,744†	174,197†	398,941†	†1,143,336
April	235,425†	83,694†	317,110†	
May	231,787	134,756†	366,543†	
June	155,649†	112,705†	278,354†	†962,007
July	182,524	142,344†	324,838†	
Aug.	176,854†	164,475†	341,329†	
Sept.	152,652†	96,694†	249,346†	†915,513
Oct.	93,952	83,582	177,534	

† Adjusted.

AMERICAN CASUALTIES

Over 50,000 Killed, and More than 170,000 Wounded

Washington, Saturday.

In an interview General March stated that the American casualties in the war were as follows:—

Killed or died of wounds	36,154
Died of disease	14,811
Deaths uncertified	2,204
Wounded	179,625
Prisoners	2,163
Missing	1,160

The Americans captured 44,000 prisoners and 1,400 guns.

Demobilisation from the American camps was proceeding with eight divisions of regiments of coast artillery and two of field artillery.—(Exchange.)

EN ROUTE FROM RUHLEBEN

Copenhagen Saturday.

The transport home of British subjects who were interned in camps at Ruhleben is now in full progress. The first of the two steamers employed for the purpose arrived at Copenhagen to-night with about [illegible] civilian prisoners on board.

The British prisoners broke out into loud cheers as their steamer drew alongside the quay. Presently they began to sing: "It's a long, long way to Tipperary."

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MODERN WAR.

BY

V. DERRÉCAGAIX,

COLONEL D'INFANTERIE BREVETÉ,

Commandant en Second l'École Supérieure de Guerre, Paris.

TRANSLATED BY C. W. FOSTER.

[AUTHORIZED TRANSLATION.]

PART I.

STRATEGY.

WASHINGTON:
JAMES J. CHAPMAN, AGT.
1888.

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TRANSLATOR'S PREFACE.

The original of this work was written with a view to inform the French army upon the art of war as it is to-day. The Author does not address a victorious army, but one that is endeavoring to recover from the convulsive shock experienced in 1870. The strain of lofty and urgent patriotism that pervades the treatise will therefore be easily understood. Moreover, the influence of this ardent tone upon the reader can not fail to be salutary by quickening answering sentiments. It may be said also that nothing could be more fully calculated to impress the Author with an earnest sense of responsibility in discharging his important task, than the feelings in which his patriotic language has its origin. They have set a watchful guard over his judgment against the introduction of erroneous instruction.

In his treatment of the subject of modern war, he has avoided the extreme views of those partisans who on the one hand contend that there are absolute rules of war incapable of the least vibration, and of those on the other who deny that there is such a thing as an "art of war." He recognizes the value of certain general truths in the conduct of warlike operations, but is equally explicit in declaring that their applications change with the shifting conditions of warfare.

He begins his work by giving the strength, com-

position, and organization of the principal European armies; passes to that great body of measures in preparation for war, so essential to be known and followed to-day; and then enters upon the more active part of his subject by considering, with appropriate explanation and illustration, the various operations of war—mobilization, concentration, attack of frontiers, marches, and battles.

While putting in distinct relief the principles of the past that are suited to the requirements of the present, he has not hesitated to point out those precepts that have been discredited by experience; and no one can fail to note with what clearness he has drawn new principles from the masses of facts created by recent wars—principles which under various forms will be powerful directing agencies in the campaigns of the future.

In addition to setting forth the material aspects of the art of war, he continually impresses upon his readers the importance of the psychologic elements in determining success. He indicates the ways in which the moral pulse of armies may be raised and sustained. He specifies the means of arousing and quickening that military ardor which is the forerunner of victory.

Since the publication of this work in the original, several changes have taken place in the strength of European armies. These have been duly recorded under the heading, "Supplementary Notes."

PREFACE.

In 1867, three years before our disasters, General Trochu wrote: "We have reached one of those transition periods in the existence and functions of armies, marking the end of certain methods employed in past wars, and inaugurating others for use in the future.

"It was Prussia's well-merited fortune in 1866, as formerly in the time of the great Frederick, to have foreseen the new evolution in the ways and means of warfare, to have very attentively studied its conditions during a long peace, for the most part with success, and to have opportunely and resolutely applied the results."

To-day, all serious minds recognize the remarkable advance which improvements in fire-arms on the one hand, and the applications of steam and electricity on the other, have brought about in the art of war.

Two events of considerable importance, the wars of 1866 and 1870, have arisen to give validity to these new methods.

Two great nations, Austria and France, have paid in blood, treasure, and influence, for their failure to quickly enough comprehend the extent of this progress, and to adopt in time the changes made necessary by it.

It was only after bitter and cruel lessons of defeat, that these States awoke to the necessity of modifying their

military institutions and of copying those of the conqueror.

Since then they have persuaded themselves that enough has been done for national honor and security in adopting with the Prussian organization, arms of great power, and service rules in harmony with the new methods of warfare.

These innovations are, however, graduated to too small a scale.

The Germans, with their diligent habits, with their intellectual forces constantly directed toward the practical side of things, make no mistake about the matter. In their view, the operations of war have also changed.

The grand principles upon which the genius of great captains has impressed a character of good sense and simplicity have certainly not been varied; but their applications, as various in their forms as the manifold problems in the life of nations, have been deeply modified. These applications are even improving from day to day, and it is only by following them with attention continually on the alert, that a State may reasonably hope to keep abreast of its neighbors in warlike preparation.

These are the new processes which constitute *modern war*.

Where is the Frenchman, where the soldier, who has not been impressed by the unbroken chain of our reverses in 1870? Where is he who has not asked the cause of these unrelieved defeats? And where are those who, in default of a plausible explanation, have not been tempted to say to themselves, as well as to others: It is fate! Fate! paltry excuse of minds without resources!

No, it is not fate that has overwhelmed this people with such misfortunes. It owes them to its own infirmities, to its mental and physical organization, perhaps, —to that impressible and brilliant character peculiar to its origin and race, which prevents it at times from going to the bottom of things and seizing the lessons to be drawn from the great facts of history. It owes them especially to its ignorance of the new processes of war.

In 1871, immediately after our reverses, it seemed to us fitting to write: "The hour has come for the thirty-six millions of French people who survive, to awaken to a sense of their duty and set to work. Ambition must give place to devotion, discouragement to hope, selfishness to self-denial, and illusion to reality. But in order that the labor may be fruitful, we must commence by looking for the cause of our misfortunes, and the specific adapted to their cure."

To-day the experiment has been tried. Every one has applied himself to the task, and important results have been reached. The generous efforts put forth, prompted by love of country and reverence for the flag, have regenerated our army. A new spirit and a new discipline, drawing strength from the performance of duty and from devotion to the land of our birth, have penetrated our ranks; and from the general-in-chief to the lowest subaltern, all the officers of the army, putting zeal before the mean ambitions and deceits of life, have borne their part in the work of reorganization inaugurated in 1871.

It is these efforts and the improvements of all kinds brought about in our military institutions, that have

effected a restoration of the guaranties of national security and independence which had become for France a condition of her existence.

Yet all this is not enough.

It is essential that we now analyze, probe to the bottom, and expound, the methods of warfare which have given victory to our enemies. It is especially necessary that we develop general principles and conclusions in our researches, which shall fix these new methods in our minds, and enable us in the hour of conflict to struggle with hope of success in our turn.

This book has no other aim. It will therefore be a study, and nothing more.

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ERRATA.

Page 213, fourth line from bottom, for "*stations de transiton*" read "*stations de transition.*"
Page 226, eleventh line, for "Thrinville" read "Thionville."
Page 263, eleventh line, for "d'Pallières" read "Pallières."
Page 288, twelfth line from bottom, omit *.
Page 353, fourth line, for "the two railroads of the Vosges-Saint-Dié and Épinal" read "the two railroads of the Vosges—Saint-Dié and Épinal."
Page 386, fourth line, for "reversists" read "reservists."
Page 402, sixteenth line, for "or" read "and."
Page 568, twelfth line from bottom, for "Brescia" read "Brescello."
Page 594, tenth line from bottom, insert "to" before "be."
Page 619, fourth line from bottom, for "an" read "my."

INTRODUCTION.

I. DIVISION OF THE WORK.

In principle, a treatise upon the art of war should constitute a body of doctrines, and form an ensemble capable of informing the mind of the reader with precision upon the various questions which it embraces.

Unfortunately, the task of preparing such a work, difficult at all times, is in our day much more so than formerly.

Immediately following our reverses, after the brilliant triumph which Germany had won, the secret of victory was sought upon all sides. Confidence in the theories of the past had been rudely staggered. Even those held in esteem in the Napoleonic age could no longer be followed with safety. As an effect of Prussia's example in forcing all European powers to transform their military institutions and arm every able-bodied man, and on account of improvements in fire-arms and the development of rail and electrical communications, it was perceived that the rules of the military art had been subjected to changes which were becoming more pronounced every day, and which placed armies in a veritable state of transition.

To-day they are no longer the same as in 1870, and the future no doubt reserves still further surprises.

And yet, in the midst of these incessant transformations, some principles, as eternal as the logic which established them, have remained unshaken. Their application, however, has required new methods, and in

practice presents combinations as numerous and as varied as the caprices of destiny or the suggestions of the human mind.

There thus results a mode of learning the art of war which is not that pursued in former times.

It is highly important then that we define this system, and endeavor to search out the rules which to-day correspond to the most usual circumstances of field service; so that after having studied them, one can say to himself, in presence of a given situation: This is the proper thing to be done.

At the outset, it is appropriate that we set forth the method to be followed in this treatise. This will serve to give the reader a clear idea of the subjects that are to be presented, the order of their development, the aim of the work, and especially its utility.

A study of the miltary art necessarily embraces questions of military history, strategy, and grand tactics. We thus have three orders of facts, and a natural division of the subject into three parts.

But this classification may be simplified. First, military history should especially serve to demonstrate the principles of strategy and grand tactics. Under this form, the facts which it discloses most forcibly strike the mind. Instead, therefore, of considering it separately, it will be more advantageous to distribute its teachings throughout the whole of the work.

As to strategy and grand tactics, they form two branches of the same science, and rest upon principles whose elucidation, to insure clearness, requires a determinate order. These principles present two series of distinct ideas, the one relating to operations, the other to battles. The first, which are ordinarily the prelude to the conflict, belong generally to the domain of strategy; the second relate to grand tactics.

It will be logical, therefore, to divide the work into two parts: Strategy and Grand Tactics.

They will aim at explaining the methods adopted in our times to set in motion the military forces of a state: what the Germans call the *elements of war* (*Kriegsmitteln*) and the combat forces (*Streitkräfte*). It will be necessary at first then to become acquainted with these forces, and to precede the study of strategy and grand tactics by some observations upon the organization of armies.

PART FIRST.

STRATEGY.

Definitions.—During the past few years, different authors have framed numerous definitions of strategy and tactics. Some, desirous of finding in new arguments a remedy for past mistakes, have sought new theories upon the art of war. Others have denied that there is such a thing as strategy, and attributed all the results of war to tactics. For a small number, strategy is the conception, and tactics the execution. According to some writers, strategy is the *science of operations;* tactics, *that of battles.* The Germans, following the Archduke Charles, call strategy the *art of the general-in-chief.* According to M. Thiers, "*Strategy* should conceive the plan of campaign, take in with a single sweep the whole of the probable theatre of war, mark out the line of operations, and direct the masses upon the decisive points. It is the duty of the *tactician* to regulate the order of marches, to place the forces for battle at the various points indicated by the strategist, to enter upon the action, sustain it, and manœuvre so as to attain the end proposed."

For us, it is important that we be not misled by ver-

bal distinctions. The main thing is to adopt a logical definition, and to indicate plainly the ideas forming the starting point in our studies.

We shall therefore consider with Jomini that *strategy is the art of manœuvring armies in the theatre of operations; tactics, the art of disposing them upon the battle-field.*

This definition has the advantage of indicating the natural order of development in a treatise of this character. It shows that such a work ought to commence by a study of the composition of armies, pass to the theatres of operations, and then to the operations themselves.

The most logical way to introduce clearness into the treatment of this subject, is to pursue the order approaching nearest the reality of facts in war; that is to say, to follow an army in the principal events of its career, consequently to study its organization, its preparation for war, its mobilization, its transport service, its deployment upon the frontier, its strategic marches, and finally, its offensive and defensive operations.

Organization of Armies.—Without reviewing the opinions contained in special works, it will be useful, in order to enlist a sounder appreciation, to recall the changes in armies which have occurred in our age; to examine the constitution of the command, and the elements that come to its aid; to investigate the principles serving for a basis in the composition of army groups, armies proper, and grand armies, and those directing these masses in time of war. We shall thus succeed in getting a clear idea of the part played by each of these elements in the field.

Finally, in order to understand the real value of an army, we must take into account its moral strength, the means of creating and developing this quality, and the

importance which it acquires amidst the tests of actual war. We must bring forward the practical reasons which have made the present compositions of armies preferable to those of the past, especially in case of the nations with which France may be called upon to measure herself.

After the organization of armies, will come an account of their functions in time of war.

The strategic rôle of an army comprises a period of preparation and a period of execution.

Preparation for War.—Preparation for war includes a preliminary study of the theatre of operations and of the resources of the enemy, and the adoption of a *projet* of operations.

Study of Theatres of Operations.—Theatres of operations require special attention. It is upon their study and the more or less favorable conditions which they present, that the choice of lines of operations, and the combinations of a campaign depend. The changes which they have undergone in recent years and the consequences resulting therefrom, ought especially to be made prominent.

To give an idea of these changes, it will suffice to recall that the methods of army transportation and supply, the conditions attending the protection of the communications, and the mode of transmitting orders relating to the needs of an army and those directing its movements, have all been more or less modified.

From another point of view, these modifications have exercised an influence upon the defensive organization of theatres of operations; and while improvements in fire-arms have given new forms to fortifications and more powerful means of resistance, the rules governing the selection of defensive positions have also been subjected to material changes.

It may then, in general, be said that the progress of modern industry has altered the character of bases of supply, lines of defense, strategic points, and even some of the objectives, as well as the directions of manœuvres.

The study of theatres of operations will aim at setting forth these transformations.

Study of the Resources of the Enemy.—The attention bestowed upon the resources of the enemy, has for some years experienced an extraordinary growth among all the powers. This study is everywhere considered as essential for forming the *projet* of operations as is a study of the theatre of operations itself. It will be proper, therefore, to notice it and to show the improvements of which it is susceptible.

A thorough knowledge of theatres of operations and of the resources of the enemy, will permit us to pass to a consideration of *projets* of operations.

Projets of Operations.—This part of strategy was formerly called *the plan of campaign;* but in the existing circumstances of war, the execution of the plan of campaign is beset by so many contingencies, and limited at the outset to a sphere of action so narrow, that it appears natural to give it the more modest designation, *projet of operations.*

When a state is obliged to make war upon two frontiers, its armies possess two distinct fields of action, whence result two *projets* of operations and a *projet* of the whole which may perhaps be called, as formerly, the *plan of campaign.* This would be the case with France if attacked by Germany and Italy; she would have to defend the east and southeast.

In the study of the different *projets* of operations, there will be occasion to present the necessity for their preparation, to speak of their tentative character, their

limited compass, and the essential points which lead to their adoption. The *projets* will vary according as the campaign is to be offensive or defensive; and upon them will depend the plan of transportation, the choice of a zone of concentration, and the lines of operations.

The *projets* of operations being formed, we enter upon the active part of strategy, the execution. The moment has then arrived to commence operations. Now, in reality, war has but two forms: attack and defense; all others are directly connected with these or deducible from them.

Between these two forms, the attack deserves to be considered first. We shall commence then with the offensive.

Offensive Operations.—The first operation of an army is its mobilization; the second, its transportation to the frontier. This study ought especially to comprehend the systems adopted by foreign armies, the principles guiding them, the improvements attempted, and the results attained. These results are of the greatest possible importance to us when they concern neighboring armies. Once the transportation to the frontier is effected, the concentration begins. It is necessary then to execute an operation which formerly did not exist, but which railroads have created, and for which the Germans have invented a new term, *Aufmarsch.* This is the strategic deployment. Its purpose is to convey the army corps from the detraining stations to the points near the enemy's frontier from which they are to commence their forward marches.

The strategic deployment is preceded by the movement of independent cavalry divisions to the frontier. These large units have an immediate duty of a peculiar character to perform in the face of the enemy—to reconnoitre his frontier. When the army taking the offensive

has accomplished its strategic deployment, nothing remains but to move forward. To do this, it must undertake its first marches in proximity to the enemy and his frontier, at a time when his projects and intentions have not yet been divined, and when the field of hypothesis is frequently unlimited. The only thing known now to a certainty is that an act of hostility is about to take place,—the consequence of modern plans of army transportation, and the general military system in vogue,—an act which the Germans call *piercing the frontier*.

Prudence will dictate the resulting measures—marches often cut short, march fronts (*fronts de marche*) narrowly developed, deep formations or formations in echelon.

Of this character were the first marches of the Germans in 1866 and 1870, in which their good fortune at least kept pace with their skill.

Attack of the Frontier.—The arrival upon the enemy's frontier ordinarily leads to the first engagements.

To-day, as all nations have adopted the same general methods of mobilization and transportation, it is probable that the concentrations and deployments upon the frontier will be effected at the same time by the opposing armies. In any case, the difference will not exceed a few days—a period sufficient, it is true, to reduce one of the adversaries to the defensive, but not to prevent his opposing the passage of the frontier.

This passage can then be effected only by force of arms. Now, combats may be looked for, the locality of which can almost be determined in advance. The tactical dispositions for these, as well as their consequences, should be examined with care.

Strategic Marches.—After passing the frontier and driving back the first hostile groups, the armies find the

way comparatively open. The enemy, obliged to make new dispositions and to concentrate his forces, retires behind a line of defense or upon a point of support. The assailant will then undertake the marches conducting him to his principal objective and, probably, to his first great battle. Marches made under these conditions are essentially strategic marches, and they are always of the highest importance.

It is in these grand manœuvres that the great captains of all ages have developed the resources of their genius. It will then be indispensable to study them both in past and modern times.

Here the field of observation expands. The essential point will be to draw practical instruction from them, or at least conclusions which shall lead us in the future to avoid the disasters of the last war.

The most interesting strategic marches of our day are those which led to the battles of Königgrätz [Sadowa], Rezonville, and Saint Privat [Gravelotte]. In the study of their most striking details, of the combinations of the leaders of the victorious armies, and of the circumstances which inspired their deliberations, their orders, and their decisions, we still find most useful instruction.

When the strategic marches have conducted the armies to the vicinity of the enemy's masses, engagements are imminent. Tactics then governs the situation. Therefore the strategic study of the offensive ought to stop at this point. It remains to examine the operations of an army reduced to the defensive.

Defensive Operations.—The advantages and disadvantages of the defensive, the dangers to which it gives rise, the rare occasions when it can reasonably hope for success, the circumstances which oblige an army to adopt this system of warfare, are so many essential subjects for study. In our day, it is usually the delays attending

mobilization and transportation that condemn an army to the defensive. The cause of these delays and the means of preventing them are matters entitled to examination.

Concentration of Armies.—The concentration of armies upon the defensive depends upon various considerations, some relating to the choice of a zone of concentration, others to the grouping of the armies.

While the troops are still leaving the transports at the military disembarking places adopted as the extreme limit of rail transportation, the army must concern itself with the protection of the frontier against the attempts of the enemy. This is an urgent necessity. It is essential then to designate the troops which are to form the defensive screen, and define the duty of the cavalry divisions which are soon to supplement their efforts. This cavalry will operate very differently from that which precedes the army of the offensive, and the distinction ought to be clearly understood.

Movements after Concentration.—The concentration ended, two alternatives present themselves to the defensive: the army will be able to advance and meet the enemy, or it will be forced to await him in position.

The first, called active defense, is somewhat analogous to the offensive, with this difference, that the defensive knows the ground and endeavors to draw full returns from the advantage.

The second is passive defense, and leads to certain defeat. Therefore its study can have but one aim: to learn to avoid this situation, and to change the struggle as soon as possible into an active defense.

Passive defense admits of only one operation, *a defensive battle*, which belongs to the domain of tactics.

PART SECOND.

GRAND TACTICS.

When the assailing army has crossed the enemy's frontier, won the preliminary engagements, and accomplished the marches conducting it within reach of the adversary's main forces, its strategic rôle comes to an end and gives place to tactical functions. At the moment, indeed, when the two forces are brought into contact, when daily minor engagements foreshadow a battle near at hand, the armies are often obliged to modify their first dispositions. They must pass from an extended to a narrow front, form this front in angular or in echelon order, according to the case, and give their marches a single objective, *battle*.

The movements executed under these circumstances are called *manœuvre-marches*.

Their importance, their aim, and the principles governing them, require special consideration.

At this important juncture the rôle of the cavalry undergoes a change, of which an accurate idea should be formed. Moreover, a variety of incidents come into view at this critical time, either in the marches preceding foreseen battles or in those leading to chance encounters. Thus we are drawn to the study of flank marches, of turning movements designed to menace the enemy's line of communications, of the dispositions to adopt upon nearing the enemy, and finally of those proper to employ on the eve of battle.

We reach then the crowning operation of the war, that which represents both the first objective of the armies and the aim of all their movements—*the battle*.

Battles.—The study of battles has rarely been made with the fullness of which it is susceptible.

Formerly they were divided into ten or twelve classes. To-day, practice and experience have led to the abandonment of these enumerations, which do not correspond to the reality of things.

We shall here accept but two descriptions of battles, foreseen and chance battles. It will then be proper to explain their points of difference, the movements which decide success, the circumstances which confirm it, and lastly, the dispositions which insure decisive results to the victor.

Defensive Battles.—Defensive battles are always foreseen actions. Here we should at first be made acquainted with the circumstances rendering them necessary, the proper rules for their preparation, the conditions of a good position, the measures conducing to success, the means of discerning the probable point of principal attack, and the dispositions to be made to meet it.

We shall examine then the means of preparing to counter-attack the army on the offensive,—an operation which can alone give importance to the results,—and in the last place, the consequences, often disastrous, which defensive battles entail.

Pursuits.—Great battles create new situations for the belligerents. The rôle of each is simplified. The vanquished retires upon his supports; the victor has only to pursue.

Two cases then present themselves: the first, when the enemy's army is shattered; the second, when his forces remain intact. In both instances, it is indispensable to study the aim of pursuits, the moment to begin them, the manner of their execution, the choice of directions, the proper methods of attacking columns in retreat, and the duties of the different arms. In our day, pursuits sometimes take on the character of

new strategic marches. The pursuit of the 1st and 5th Corps of the Army of the Rhine by the III. German Army in 1870 is an example of this.

Retreats.—The study of pursuits leads to the consideration of retreats.

It will be appropriate here to indicate how the proper moment for commencing the retreat is to be determined, the means of breaking off the action and of covering the first rearward movements, the choice of direction, the importance of this choice upon the results, the means of protecting the columns, and finally the general features of its execution.

Retreats usually denote the end of the operations. The study of grand tactics should then come to a close here.

II. AIM OF THE WORK.

To study applied strategy and tactics in time of peace, is to study the records of the acts of the command in the conduct of armies, and commentaries upon the results to which they lead. Considered in this view, the utility of instruction upon these subjects has no need of being demonstrated. Moreover, it would be difficult to render intelligent service in war without possessing the ideas furnished by such instruction. One of the qualities most essential in this service is decision, and although often given by nature, this faculty cannot be properly exercised without the aid of science.

To know is to determine is as true as that *to determine is to be able.* The first idea completes the second, and while awaiting the experience brought by years, it is instruction strengthened by reasoning which alone can replace it.

The great leaders have always been of this opinion, and the precepts left by them in this regard will serve, if need be, to give fixity to our ideas in the matter.

The estimate which Napoleon placed upon this subject deserves particular attention.

Extract from Observations of the Emperor Napoleon upon the Study of the Military Art.

"FINKENSTEIN, April 19, 1807.

"A proper understanding of French military art would necessitate a knowledge of the various plans of campaign adopted in the different periods of our history, whether for invasion or defence; the origin of successes, the cause of defeats, the authors themselves, the memoirs in which may be found the details of the facts and the evidences of the results. This part of history, interesting for every one, has a peculiar importance for military men. In the special school of the engineer may be learned the art of attacking and defending fortified places; but the art of war in its larger aspects cannot be taught, because it has not yet been created, if indeed it ever can be; nevertheless, astudy of history that would make known to us how our frontiers have been defended, in different wars, by celebrated captains, would be productive of great benefit. I have studied history a great deal, and often, for want of a guide, have been forced to lose considerable time in useless reading.

"Without this study, soldiers, during many years of their career, will lack the means of profiting by the mistakes which have occasioned reverses, and of appreciating the dispositions which would have prevented them. The entire war of the Revolution is fertile in useful lessons; but to gather them, long application and extended researches are often requisite. This does not arise from the lack of a detailed record of the facts, for they have been written about everywhere, and in every style; but because no one has applied himself to the task of making the research easy, and of pointing out the way to make it with discrimination."

If Napoleon could appear among us to-day, it is probable that in order to draw profit from our military history, he would no longer seek to return to that distant period when our arms, our formations, our tactical usages, our present methods of carrying on war, were unknown. After our misfortunes of 1870, he would no doubt say to us: Meditate especially upon the cause of your defeats, and in order to learn to conquer, aim to strengthen in you the qualities which at all times have been the pledge of success—instruction combined with courage and discipline.

Opinion of the Committee of Public Safety upon the Necessity for Instruction.—Under the First Republic, warlike deeds alone were not sufficient to give pre-eminence to military leaders. It was prescribed that particular notice should be taken of military acquirements; and the following directions of the Committee of Public Safety show us how much the utility of substantial military instruction was appreciated.

The Committee of Public Safety to the Generals-in-Chief of the Armies.

"PARIS, 2 BRUMAIRE, Year III.

"The National Convention reserves to itself the disposal of a portion of the vacancies in the armies for the purpose of enabling it to reward the worthiest defenders of their country by promotion; but its intention is not that acts of valor alone shall receive the prize. It wishes also to give marks of its approbation to obscure merit, to zeal, to knowledge, to talents which have not yet had opportunity to appear with advantage. Valor is the general virtue of the soldiers of the Republic. *It is valor accompanied by attainments and moral worth*, which should characterize the commander.

"The Committee of Public Safety desires that you be-

come thoroughly penetrated by this truth, and that independent of the report which you render to it of the exploits of the country's defenders, you make known to it with great exactness, the worthy soldiers who perform their duties in silence and with skill; for again we say to you, the service of the Republic requires that the officer join to courage and intrepidity the attainments which promise success, and the qualities of character which inspire consideration.

"The Committee of Public Safety invites you to keep it continually informed upon the matters to which your attention has here been called." *

Opinion of General Von Peucker upon the General Character of the Study of the Military Art.—Nothing can give a more just idea of the necessity for instruction, and of the scope of the military art, than the opinion expressed by one of the founders of the *Kriegsakademie* of Berlin, the infantry general Von Peucker, lately deceased, formerly inspector-general of the establishments for military instruction:

"The general character of this study should consist in the adoption of a practical method; that is, the application of theoretical knowledge to all military questions which can present themselves in practice.

"In order to give to this method its greatest efficacy, it is essential to utilize the productive capacity of the officers, so that practice may be benefited by scientific instruction, and that the developing faculties may be judiciously recognized. In time of war, deeds play a more important part than words; action surpasses thought; practice dominates theory.

"It is not sufficient then merely to grasp principles; it is necessary to meditate upon them, and to examine them thoroughly in their applications.

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* Pierron, *Méthodes de Guerre*, Vol. I, p. 8.

"* * * * There is a considerable interval between knowledge of principles and the faculty of making them of service in coming to a decision. The method of study pursued should tend to abridge this interval.

"* * * * It is by this method that an officer succeeds in acquiring the energy and force of will so important in actual service.

"Men indued with only ordinary strength of character can form a clear and energetic decision and put it into practice in perplexing situations, if they have acquired the faculty of guiding their course with requisite circumspection and dispatch under difficult circumstances.

"The possession of this faculty is one of the results of study. Lacking it, irresolute persons, when thrown upon their own resources, display an entire collapse of the moral elements.

"The practical method should aim at exciting mental spontaneity in the officer.

"It is above all the moral qualities of character which form the basis of an officer's aptitude for the profession of arms.

"To sum up, the principal aim of a study of the military art is to improve the intelligence and judgment of the officer, in combining instruction with the widest exercise of his moral faculties.

"This end is reached by utilizing the lessons of experience."

Passing then from the general character of a work upon the military art to a consideration of its various parts, General von Peucker thus expresses himself:

Observations upon the Study of Tactics.

"This study should aim to familiarize the officers, both theoretically and practically, with the multiplicity of circumstances that may present themselves in actual

service, and to give them the faculty of acting without hesitation in all situations that may arise.

"Applied tactics constitutes the best and most substantial preparation for actual practice in the field.

"An attentive research into the results of recent wars, ought to be considered an important factor of the science."

Observations upon Military History.

"Acquaintance with military history forms the most effectual means of learning the science of war in time of peace, and the most solid basis for assimilating its great principles. It is the most lively source of all branches of military knowledge.

"The study of military history should take into account the large operations of war and the management of armies. It should bring out the intimate connection between the genius of great captains and the results reached in the most celebrated wars.

"Historical studies should not be extended to the ages which can offer no characteristic lessons upon the methods of conducting present wars.

"These studies should embrace the military art of the nineteenth century; familiarize the officers with the real life of armies in the field; prepare them to keep a clear head and warm heart in danger; and, finally, exalt continually the sentiment of patriotism."

We must conclude from these quotations that a knowledge of the art of war is indispensable to the officer. It was by placing himself in this point of view that Marshal Gouvion Saint-Cyr thus characterized it: "The art of war is an *art for the general*, a *science for the officer*, a *trade for the soldier*."

The study of this art, then, should prepare the officer to come to a rapid decision in difficult situations arising in the field, less perhaps by the precepts and examples

with which it acquaints him, than by the methods of reasoning, the force of will, and the energy which it teaches him to develop.

It will especially call to his mind that all instruction of this kind has in our army an importance which does not exist to the same degree in the armed forces of other states. It will make him feel more strongly that we do not live in ordinary times; that like the Prussians of 1807, we are still in the morrow of our disasters; that duty obliges us to consider national independence, nay, the very existence of our country, threatened as it is by nameless hatreds, by unquenched ambitions; and finally. that each should work without pause in order to be prepared to defend her when the day of attack shall come. There is but one means to this end: to profit by the lessons of experience, to incessantly reflect upon them, and improve ourselves from day to day—thus to keep alive in us the sacred fire of the soldier, that we may develop, in the highest degree, the intellectual and manly qualities which shall again lead us to victory.

MODERN WAR.

PART FIRST.

STRATEGY.

FIRST CHAPTER.

ORGANIZATION OF ARMIES.

§ 1. WAR.

In France we have rarely attempted to define the bloody drama in the life of nations called war. This is perhaps an error, for the art of waging it cannot be seriously learned without taking into account its aim and scope. This act of violence is of such vital importance to the existence of nations and the efforts of armies, that we cannot meditate too deeply upon it.

At the present time, a few reflections upon this subject will be the more useful because our ideas have not always been in accord with those of the neighboring nations. Moreover, the institutions at present controlling the various European States have changed, in a certain measure, the general conditions of war; and the struggles of the future will probably not resemble those of the past. It is necessary, then, to thoroughly study these conditions in advance in order to know what should be feared or avoided.

Almost everywhere we observe that compulsory service is adopted as a national custom. We see it applied even by representative governments, which rest upon more or less enlarged ideas of liberty.

On the one hand, national defense has become a general obligation; on the other, the weighty questions deciding peace and war are submitted to public discussion. From this follow two results: Wars have become absolutely national; secondly, all those who have an interest in making or avoiding them, can exercise an influence upon the final determination. Wars will then be rarer, more imposing, and more impassioned. The hatreds which they stir up will undoubtedly be more lasting; but as each individual bears a share in the responsibility for the misfortunes which they entail, he will be so much the less disposed to see his country rush into these terrible enterprises.

The periods of peace will undoubtedly be longer; and while continuing, a community of interests, an increasing business intercourse, and a multiplicity of relations of all kinds, with greater facility for their exercise, will probably contribute to render declarations of war more and more serious, and more and more difficult.

The consequences of struggles of large dimensions are also worthy of our attention. Henceforth, we know that a war between two great nations will involve the expenditure of billions. During its progress, it will be impossible to calculate the cost, and a case may arise in which the conquered will not be in condition to indemnify the conquerer. What will happen then? Will the stronger make conquest of the feebler? This is doubtful. The effect would often be to cause new embarrassments and to create enemies more formidable still. But it is reasonable to believe that such a war will entail a forced fusion of the interests of the two peoples until the claims of the conqueror are satisfied.

Thence will arise new, painful and critical situations, which it will, perhaps, be possible some day to regulate in advance, within possible limits, but which to-day impose vigilance and constant preparation upon nations menaced by the enmity of their neighbors.

This state of things is the graver from the fact that the normal idea of the rights of states is obscured by the proceedings of the war of 1870, by the brutal maxim thrown then in the face of the world, *Might is superior to right*, which seems to have become the only law recognized in international relations. We are witnessing a slow transformation of nationalities and territories, the prime cause of which is the diversion of the industrial and physical forces into new channels. Civilization will no doubt profit from this change, but during its course entire peoples may be annihilated or crushed, if they cannot bring to their defense a sufficient number of trained soldiers and effective arms.

It is more than ever necessary, then, to know what war is, and what we as Frenchmen ought to expect from this act of force and violence.

Until to-day, the definition of war has been considered by us as a question of international law. This teaches us that war is a *method of compulsion used by one nation against another;* that it is a terrible but necessary scourge; that it should be resorted to only after all means of conciliation have been exhausted; that violence should never be used unless absolutely necessary; and that between several ways of exercising compulsion, the least rigorous should, so far as possible, be used.

Concerning the general rules upon the method of waging war, we are still taught that the rights of belligerents are not unlimited, and that not all means are lawful which may insure victory.

There is, indeed, a generally recognized *Law of War* which forbids the killing of prisoners, because this is an act of barbarism; which prohibits vengeance, because this is odious; which teaches nations to limit war to the reparation of injury or to the guaranty of security; which restrains from the infliction of unnecessary evils; which directs that war should be made fairly, with proper arms;

which condemns burning and devastating; and which requires respect for all the sentiments of humanity.

According to this law, the pitiless measures formerly directed against private individuals, are to-day suppressed. Hostilities have lost the violent character of past times, and the application of the war right should always be regulated by moderation. The obligation rests upon European nations to avoid unnecessary cruelties, and to teach their enemies, by their example, the principles of a law of war more humane than formerly.

Non-combatants are no longer subject to the rigors of war, and should neither be put to death nor reduced to captivity.

The vanquished justly claim the right of being treated with consideration; the victors should be generous; prisoners are brothers in arms whom the fate of war has subdued, and they should receive only kind treatment.

Movable goods should never be turned into booty.

Pillage is no longer permitted, even as an act of reprisal.

Wars of conquest are reprobated by civilization.

Independent of the fairness and good faith which hostile armies should exercise towards each other, usage has introduced certain practices of respect and politeness, some of which have acquired the force of recognized authority.

Finally, in the midst of war the sentiment of humanity ought never to become obscured, and the soldier should not forget the bonds which unite him to his fellow-man.

Such are the theories current among us, and such are those which France has invariably applied during the wars of the last two centuries.

These principles, equally generous and humane, as well as conformable to the progress of civilization, seem

to be officially recognized by European nations. However, the severities to which our people were obliged to submit in 1870, the acts of cruelty and pillage which were witnessed on various sides, show us that in reality the case is quite otherwise.

It is certain, indeed, that in more than one army, hatred or other passions assisting, practice very often fails to correspond to theory. Differences are presented with which we should be acquainted in order not to be deceived by them. They arise not only from the more or less refined condition of the populations among which these armies are recruited, but also from the ideas given on this subject by the principal military authorities.

The opinions which follow were expressed by Clausewitz at the beginning of the century. They constitute the foundation of the convictions held by the German officers; and this fact of itself obliges us to recognize their force in our turn, under penalty of being one day exposed to a terrible and cruel awakening from our delusions. Moreover, they have a practical side, to which we cannot close our eyes, and with which each of us ought henceforth to be thoroughly imbued, if he wishes to be prepared for the requirements of the future.

"*War is a duel between nations.*

"It is an act of violence, as natural and as legitimate as all the other acts resulting from international relationship, such as those pertaining to commerce, industry, etc.

"It is an act which exalts the people that successfully engages in it.

"War has only *one aim:* to overthrow the enemy and render him incapable of continuing resistance.

"Under another aspect, it should destroy his will, and make it submissive to ours by the annihilation of his moral power. But in order to impose a law upon the enemy, it is essential to render him incapable of defending himself.

"War has but one means of action: *force.* No other exists. Its exercise should be manifested only by wounds, death, and destruction.

"Moral force should serve only to render the employment of physical force more efficacious.

"*The use of force in war is absolute.*

"It is an error to believe in other means of action.

"For armies, *ordinary rights* place but an *insignificant* restraint upon the aims and rights of war.

"These *ordinary rights* should never be permitted to weaken its energy.

"Every idea of philanthropy in war is a most pernicious *error.*

"He who uses physical force to its fullest extent, without sparing blood, will always acquire superiority over the adversary who does not act in the same way, and will impose his law upon the latter.

"To introduce a *principle of moderation* into the philosophy of war, is to commit an absurdity.

"If civilized nations do not slay their prisoners, nor destroy cities and villages, nor burn farm-houses, etc., it is not through *humanity;* it is because intelligence has more part in the conduct of war than formerly.

"Civilization has developed this intelligence, and the latter has revealed to them a better use of force; that is to say, by the contributions raised from the enemy and the treaties which he is forced to conclude, victory is made to yield a greater profit.

"War is *an act of violence* in the employment of which *there are no limits.*

"The operating powers in war are force of will and the material resources at disposal.

"In order to conquer, these forces must be strained to the uttermost."

Such are the theories of Clausewitz—of that remarkable man whom the Germans, with reason, call their im-

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mortal Clausewitz, but whom they reproach with having introduced a little too much poetry into his *Treatise on War*.

These principles will explain many of the events of the last war, many of the acts, the recollection of which will perpetually weigh upon the memory of the conqueror, and which have already tarnished the lustre of his victories.

In our turn, we also must know them, must become thoroughly penetrated by them; and as they are essentially practical, must place ourselves in condition to apply them if the necessity arises.

Their application, combined with the results of compulsory service, must one day lead to very grave consequences, of which it is proper that we take account in advance.

In barbarous times, all able-bodied men were called upon to fight; consequently, all members of the opposing nations were considered belligerents.

Henceforth in Europe it will be the same. In all countries, men from 20 to 40 years of age, or even from 17 to 42, as in Germany, are enrolled in the army in some capacity. It is not then beyond the region of possibility that a rigorous application of the war right, as the Germans understand it, may lead a victorious army to take prisoner and transport out of its territory, *en masse*, the entire able-bodied population of a conquered country. Thence untold miseries, and hatreds which can never be appeased. The war of 1870 has already, in certain cases, presented this odious character of cruelty to individuals. Moreover, it has shown us a mass composed of a million men throwing itself upon a neighboring country and removing a population of nearly 400,000 citizens.

This example has aroused similar covetousness among other nations, and one day, perhaps, this greedy spirit,

put in force upon a large scale, will be the means of causing incalculable misery.

Such are the evils which threaten our country. They point out to us our duty; they make clear to us the thoughts, the convictions which should be continually present to the mind in studying the art of war; they especially give us the exact measure of the force of will and of energy which we must henceforth display in all the acts of our military life.

§ 2. ELEMENTS CONSTITUTING THE POWER OF ARMIES.

An army's power rests upon two elements:

1. *Its material strength*, which depends upon its organization. The character of the latter is itself dependent on:

Recruiting;
The constitution of the command;
The grouping of the forces;
The effectives;
The composition of the cadres;
The armament;
Technical instruction;
Means of supply, *transports*, etc.

2. *Its moral strength*, which is often too much neglected, and which may be created by:

A national spirit;
Military education;
And discipline.

The opinion of Jomini upon the military power of a state will complete the enumeration.*

"The general causes which have so much influence upon the destinies of nations," says this author, "exercise the same sway over their military condition. Victories spring in part from these causes, and develop alike

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* *Critical and Military History of the Wars of the Revolution.*

the talents of the generals and the courage of the soldiers.

"Nevertheless, it cannot be concealed that, exclusive of the internal condition of empires, an army possesses within itself the elements of its superiority or inferiority only through *the nature of its organization*, *its spirit*, *and the character of its leaders.*

The real strength of a state depends then upon *the quality of its soldiers and officers;*

"*The means of recruiting;*

"*The organic constitution of the different units composing the army;*

"*The ability and instruction of the staff;*

"*The genius of the generals;*

"*Finally, the national spirit at the moment when war breaks out.*

"Great results are obtained only by the union of these means. For, if it is true that skill on the part of the general-in-chief is the first pledge of success, the battles gained will be without result if the nation refuses to make necessary sacrifices."

To form an exact idea of the real power of armies, it is essential then to know precisely the elements of this power, and the conditions of organization which produce it.

In order to make them better understood, it will be well, in this regard, to recall the changes which have been brought about in these organizations in our epoch; and then to enter upon the study of armies by considering:

The constitution of the command;

The formation of armies;

The grand units composing them;

The duties incumbent upon them in war;

And, finally, *the influence of the moral forces upon them, and upon the results of a campaign.*

§ 3. CHANGES BROUGHT ABOUT IN THE ORGANIZATION OF ARMIES IN OUR EPOCH.

No age perhaps has seen such great changes in the organization of armies as ours.

It is to the year 1866, and to the wars which have rendered it celebrated, that we must ascribe the origin of this transformation.

Before this, European nations possessed military institutions which nearly all dated from the end of the First Empire, and which, for a long period still, would have guaranteed their security, if one of them had not become a danger to the others by the number of its effective forces and the extent of its armaments.

The characteristic feature of the military systems then in force, was the conscription of certain classes for military service and the exemption of others; in the one case, the designation was determined by lot, in the other, the the purchase of substitutes was authorized.

The arms used were yet of short range and slow of fire.

Instead of the regional method of recruiting corresponding to tactical units, there existed a national system of recruitment extending to the entire territory.

In France there were besides:

Depots at a distance from their regiments;

Reserves dispersed over the whole face of the country;

A grouping of the forces in time of peace bearing no resemblance to the disposition required by a state of war;

And, finally, as a consequence of these institutions, *a slow and irregular transition to a war footing*, exposing the country to the dangers of the defensive and the misfortunes of invasion, in the presence of neighbors more skillful or more active.

While such was the general condition of affairs in

other states, a single power, Prussia, assisted by events, guided by its practical bent and by a long concealed ambition, and favored by a strong social organization, had maintained and perfected a military system which had saved it at the commencement of the century.

The other nations, blinded like France by the lustre of their former glory, or deceived by the apparent strength of their armies, obstinately believed the military organization of the Prussians inferior and defective.

The war in Bohemia in 1866, in which we saw them triumph so rapidly over their adversaries, quickly swept aside all deceptions.

None could avoid yielding to the evidence.

The military system of Prussia, perfected by constant application, encouraged by an enlightened government, placed in the front rank of national institutions, strengthened by maintaining military leaders in their positions for long periods and by deference for exalted traditions, had reached such a development that it enabled her to set at defiance the will of confederated Germany, and finally to bring the latter into submission.

The conquered states accepted the yoke with resignation, some of them even with enthusiasm. The new condition of things was presented to them in the name of fatherland, in the name of national unity. That was sufficient.

The other powers, surprised by these events, hastened to make a critical study of this military state that had just arisen with such brilliancy in the centre of Europe.

Its organization has since served them for a model in placing their military institutions upon new foundations. But it is not the prestige of Prussian success which has driven them to this course. They have been forced to it by the fact that the German organization had by enlarging its means of action become a menace to their independence.

For its proper defense, a state is always obliged to provide a number of men, small arms, and cannon, at least equal to those which can be opposed to it by its neighbors. It should be able to put these in readiness in at least as short a space of time as the latter. And, likewise, it is necessary for its security to possess arms of at least equal quality.

Such was the mainspring of the military changes brought about in Europe after 1866. In reality it was a question of life or death.

To-day, with the exception of England, which is protected by her insularity, and with the further exception of a few small states whose existence is guarantied by treaties, all the European powers have, by degrees, adopted similar military systems.

Results of these Changes.—There results from these changes a condition of affairs which is not without a serious aspect.

Each State has stretched its war capacity to the utmost for the purpose of reaching the maximum of disposable effectives, and securing the greatest rapidity of mobilization, the most perfect armament, and the most complete defensive system possible. With all, the products of recruitment are utilized to the fullest extent. The expenses also have nearly everywhere reached the extreme limits of fiscal resources.

In the midst of these excessive preparations, the lesser powers, unable to equal the forces of the greater, seem condemned to disappear, or, to use a German expression, to enter willingly or unwillingly into the sphere of action of their formidable neighbors.

It is not doubtful that in the end, this situation will create a state of crisis, the more grave because its first effects have been to invalidate treaties, that is to say, honorable engagements, *bona fide* compacts, and to re-

place them by the employment of brute force, which man knows how to skillfully utilize to-day for the advancement of his interests or ambition.

This survey will give a clear idea of the point to which each people must henceforth go in the improvement of its military condition, especially France, whose defeats have isolated her in the midst of her neighbors, while exciting hatred and a spirit of rapacity in them which still endanger her possessions.

I.—General Principles Governing Existing Military Institutions.

From what precedes, we see that existing military institutions are characterized by:

Compulsory service;
Reduction of the time spent with the colors;
Weakness of the peace forces;
Increase of the effective war forces.

In reality, these organizations have no aim except to obtain, as in the case of Germany, the greatest possible number of combatants.

But all nations do not succeed in this with the same facility. In Germany, for instance, the increase in population is so rapid that each year assures her a preponderance more and more pronounced.

One of the fundamental principles of the new organizations, is to have the military forces grouped during peace in the same manner as in time of war, and the tactical units stationed upon the territory whence their war complement of men is to be drawn.

The vast impulse which, upon the breaking out of a war between great States, will thus suddenly put in motion more than a million of men, will be found to be divided in advance, into a multitude of local movements of limited extent.

The complex operation which results is consequently simplified and accelerated.

However, regional recruitment, which is at the base of this simplification, has not been everywhere adopted. In France it gave way to considerations of various kinds. A mixed system was preferred, leading to the retention of the old method of recruitment, while permitting regional mobilization.

In order to understand these new institutions, it is indispensable to have a thorough insight into those which have distinguished the common exemplar—those of Prussia.

II.—Outline of the Military Development of Prussia.

In order to trace the origin of the Prussian military system, we must go back to 1806. In this year, the victor of Jena reduced the vanquished army to forty thousand men.

But profiting by the agitations of Europe, Prussia was able to recover rapidly, and to place in line at Bautzen, seven years after her defeat, 153 battalions of infantry and 124 squadrons of cavalry, or together about 200,000 men.

In the following year (1814), an organization based upon the principle of compulsory service, assured her a field force of 330,000 men, supported by the second call of the landwehr and 140,000 depot troops. Thus, eight years after Jena, an effective army of 520,000 soldiers (a twentieth part of the entire population of the country) had been organized.

Among the men who had aided in this transformation, and in demonstrating its influence upon the destinies of European States, was a young second lieutenant of the Guard, who more than all his comrades had suffered by the humiliations of his country. This was Prince Frederick William Louis of Hohenzollern, who in 1871 became Emperor of Germany. In 1814 he began his military career at Bobigny, near Paris, as a subordinate

officer in Blücher's army. Called to the regency of the kingdom in 1860, and knowing the value of numbers, rigid discipline, and well-selected generals, one of his first cares was to reorganize the army. He augmented it by 117 battalions, 40 squadrons and 5 groups of artillery; and by his example communicated an extraordinary military impulse to the entire nation.

Four years later, in 1864, this circumstance exercised a singular influence upon the warlike movement which then launched Prussia upon a career of sanguinary struggles and conquests.

The reorganization of 1860 is one of the most remarkable phases of her military development. It assured her an effective force upon a war footing of

370,000 field troops,
110,000 depot troops,
150,000 troops of the first call of the landwehr.

In all 630,000 men, which, by a regional mobilization, skillfully contrived, could assemble within two or three weeks upon either of her frontiers.

Thus, in less than sixty years, the Prussian army passed from 40,000 to 630,000 men.

The increase of the effective force was not, however, the only object held in view in the reorganizations of 1814 and 1860.

The first attempted simply to obtain large battalions with a comparatively small budget; and to succeed in this, it imposed upon the army a defective system of mobilization;—this, indeed, was subordinated to the cooperation of the landwehr.

The reorganization of 1860 liberated it from this restraint, and permitted the field forces to assemble by drawing upon the reserve only. At the same time fire-arms were improved.

Prussia could thus at the outbreak of war add superiority of fire-arms to numerical ascendency; then

by means of her ordinary and her strategic railroads, she placed herself in position to make full use of these advantages, and to take the field before any of her neighbors.

The practical importance of these changes should have been plainly apparent to all other nations. They gave to the Prussian army qualities for the offensive which, supplemented by a superior system of technical training and military education, assured her supremacy.

Instead of this, these nations obstinately clung to time-worn methods, and affected to see in these troops only a kind of militia, incapable of contending with the regular forces of other countries.

The victory of Königgrätz resounding throughout the world, opened all eyes, and dissipated these illusions.

III.—Changes Imposed by the Battle of Königgrätz.

The changes made necessary by this great event were considerable, and caused all governments to reflect. First, from an historical point of view, the Treaty of Prague, ratified August 30, 1866, sanctioned the dissolution of the Germanic Confederation, suppressed the preponderance of Austria, and increased Prussia by nearly 25,000 square miles and her population by four million souls.

It annexed to this power all the states to the north of the Main, subjected those to the south to its authority, and gave to it a perception of its strength and a confidence in itself unknown before.

In brief, it spread a feeling of alarm, and inaugurated a new era among the systems of European states, the importance of which will no doubt be confirmed by time.

From all these points of view, a memorable place is assigned in history to the 3d of July, 1866, the date of the battle of Königgrätz.

From a military standpoint, the changes brought

about in the life of the peoples of Europe, and in the organization of their armies were not less important.

They may be summed up thus :

Recognition of the principle of compulsory service;

Necessity of increasing the effective forces, and consequently of adopting a military system similar to Prussia's ;

Complete change in the peace organization, in the mode of preparation for war, in mobilization, in transport service, in concentrations, in armaments, in the applications of the military art, and in the defensive systems of the different states.

Finally, enormous increase in military budgets.

This was, in short, a revolution in the military institutions of the nations. Its extent was quickly understood, and each power immediately began to transform its military organization according to its resources and the character of its people.

In France, the reform was timidly applied. In 1868, a mixed system was adopted, which recognized the compulsory method, without daring to put it in force.

The creation of the *garde nationale mobile* characterized the laws passed at this time. This new element of defense existed only on paper, and the troops which composed it had really not to serve a single day under arms.

The illusion of maintaining large effective forces was thus indulged, at the same time that the systems of bygone times were adhered to.

This was one of the causes of French reverses.

In Prussia, on the contrary, the law of compulsory service was applied to forty million souls, and the masses of 1866 were doubled.

In 1870, 1,183,000 combatants were put on foot by Germany in eighteen days, and forces aggregating 462,000 were transported to the frontier in the same time.

This numerical superiority was the more crushing for

us, from the fact that the Germans united with it a preponderance of artillery and an almost perfect system of practical instruction.

The development of the military power of Germany could not fail to create apprehensions in Europe, which the events of 1870 sufficiently justified. These manifested themselves in many ways after the Peace of Frankfort, notably in a brochure published in Vienna at this time and attributed to the Archduke Albert.* We there read:

"So long as European international law shall continue to be trampled under foot and replaced by violence, no people can aspire to the rank of a great power, if it does not possess a military force of the first order, so well organized and so strong that no other nation can attack it with prospect of success.

"Every State bordering upon Germany, which shall not be able, at least approximately, to rival her in promptness and precision of mobilization, will hold no assurance against invasion, that is to say, be secure from destruction of its prosperity at its very centre."

Consequences.

"1. The system of levies *en masse*, organized as in Prussia, must be adopted in principle, then put into practice as speedily as possible by *all the States*, each being careful, however, to introduce into it the changes necessitated by *its peculiar characteristics.*

"2. Every State which neglects this precept will imperil its existence.

"3. The experience of Prussia during the last sixty years, and the improvements effected by her during this period, should serve as a means of avoiding blunders and deceptive measures of all kinds.

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* *Das Jahr 1870, und die Wehkraft der Monarchie, u. s. w.*

"4. It may, perhaps, be permissible to endeavor to soften such of the rigors of the Prussian system as can be thus modified without endangering *rapidity of mobilization* or diminishing *the proportion* of troops disposable at the outset of a campaign.

"This, however, should be attempted only with extreme caution, and with the advice of the most competent and most eminent *military experts;* otherwise it will be accompanied by dangerous errors.

"5. To repel an invasion, all the effective men in the country should unite in its defense. This may be accomplished in several ways. But it is necessary that in time of peace *all should be prepared*, that each should become familiar *with his part*, and that *every able-bodied man should be put by law as a legitimate combatant under the protection of the international code.*

"6. The more the defensive strength of a country is increased by these measures, the less liable will it be to have war forced upon it. Moreover, the greater the strength the several states of Europe acquire, the better assured will be the general peace.

"7. The entire population should consider it an honor and a most sacred duty to co-operate for defence of the country. It is essential then, that during peace, each should willingly make the personal sacrifices requisite to prepare him for the service of the state in time of war."

The first consequence of these observations is the necessity for a thorough acquaintance with the organization of the German army.

§ 4. MILITARY ORGANIZATION OF GERMANY.

The last military law, enacted May 2, 1874, was modified May 6, 1880. It is a reproduction of former laws, and regulates the organization of the army as follows:

Service is compulsory from 17 to 42 years of age. It includes:

3 years with the colors;
4 years and 6 months in the active army reserve;
5 years in the landwehr.

The latter is no longer a territorial but an active force, mobilized at the same time as the army, and organized in advance to take part with it in hostilities under the same title. In reality, under a disguised form, the Prussian army has twelve and a half classes disposable for war. The rest of the contingents serve to form the landsturm.

The dominating idea of this system, a practical idea *par excellence*, is to have as many instructed men as possible in the first line.

Now while the regulation contingent is 151,000 men, the actual number is 160,000. This is brought about in the following way: For the purpose of instructing the greatest possible number, *royal furloughs* are granted, which enable the Minister of War to send to their homes, at the expiration of one or two years, the men considered sufficiently well drilled, and to replace them immediately by others drawn from the same localities.

In 1882, 159,000 were passed through the ranks. It is well to note, moreover, that the dimension of the contingent is continually augmenting with the increase in population.

In France, with a contingent of 140,000 men, only from 105,000 to 112,000 receive four years' instruction; the balance, or from 28,000 to 35,000, remain with the colors but from six months to a year.

Moreover, in Germany, with the uninstructed balance* of the valid contingent, 120,000 men of the second category (those who on account of some physical deficiency have escaped the full term of service), and 10,000 sole supports of families, there is each year formed

*About 10 per cent. of the entire number—determined by lot.—TR.

a recruiting reserve,* of from 130,000 to 140,000 men, divided into two classes.

The first class includes those best fitted for the service of arms. They are utilized to fill vacancies in the field forces. In 1880, 79,000 of these were summoned for this purpose. They are given each year from 18 weeks' to 4 months' instruction.

The second class is called out only in time of war.

The remainder of the national force constitutes the landsturm, composed of men from 17 to 20 and from 32½ to 42 years of age.

Germany had thus in the spring of 1883, actually present :

Field Forces.

Active army:	3	contingents of	151,000 men each,	producing	436,000	men.†
Reserve:	4	"	143,000 (3 yrs. instr'n)	"	506,000	"
Landwehr:	5	"	143,000 men	"	578,000	"
One year volunteers:	12	"	5,000 men	"	52,000	"
Recruiting Reserve (1881 and 1882)					55,000	"
					1,627,000	men.

Of these 1,627,000 men, there are 1,520,000 who (except two contingents) have received three years' instruction.

This army thus comprises, with the landsturm, 2,655,000 men.

As to the principles which regulate its recruitment, its composition, and its formations, it will be sufficient to mention them in brief.

Recruiting is regional.

The army is composed of 18 corps, the Guard included, which have the same components in time of peace as upon a war footing.

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* The *Ersatz* reserve.—Tr.

† Increased 41,409 men by the Septennate Bill of March, 1887.—Tr.

Mobilization, like recruitment, is regional—an essential condition of rapidity.

The army corps is the principal unit; it comprises three distinct elements, namely: two divisions of infantry (each with its proper complement of other arms) and corps artillery.

Infantry.—There are 37 divisions of infantry, one of which—a Hessian Division—is in addition to the 18 army corps. These 37 divisions consist of 75 brigades, or 161 regiments of 3 battalions.

In time of war, a supplementary force may be counted upon, composed of a half battalion to a regiment; that is, 1 battalion to a brigade, making 4 to an army corps (except in Alsace and in the Guard), or for the 16 corps 64 fourth battalions, equaling 21 regiments, or 2 new army corps and a division of 5 regiments. The latter, joined to the Hessian Division, completes a third new corps.

There will then be actually 21 army corps mobilizable at the first call, or 630,000 combatants capable of being put in line at commencement of hostilities.

Cavalry.—The cavalry comprises 93 regiments of 5 squadrons each. One squadron in each regiment is designed to form a depot in time of war. 37 of these regiments are attached to infantry divisions, and 56 form independent cavalry divisions.

There would thus be 9 divisions of independent cavalry of 3 brigades each. But everything leads us to believe that this force will rather be formed into 10 divisions: 8 of 3 brigades each, and 2 of 2 brigades.

Artillery.—The artillery embraces 37 regiments of field artillery or 340 batteries, 294 of which are composed of pieces of 9 centimetres, and 46 (horse batteries),

of guns of 8 centimetres, or in all 2040 field pieces. The preponderance of guns of large calibre is worthy of notice.

There are, in addition, 14 regiments of garrison artillery (each of 2 battalions), and 10 prepared siege equipages, with 1352 guns of heavy calibre.

Strength of Tactical Units.—The strength of the tactical units is quite well known; it will be sufficient, therefore, to review it briefly:

Each battalion comprises 579 men upon a peace footing, and 1,048 men (officers included) upon a war footing.
Each regiment comprises 3,165 men (officers included) upon a war footing.
Each brigade comprises 6,384 men (officers included) upon a war footing.
Each division comprises 14,796 to 16,072 men (officers included) upon a war footing.

On first view, these troops seem to represent all the field forces; but there must be added to them the landwehr, which is now so organized as to form in time of war—

1st. 162 regiments of infantry of 2 battalions each (except 1 regiment). These comprise 139 *mobile* and 23 reserve regiments, each corresponding to an active regiment;

2d. 37 regiments of reserve cavalry, plus 4 *mobile* squadrons;

3d. 54 reserve batteries, capable of being largely increased.

In reality the landwehr almost doubles the dimensions of the active army.*

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*As a rule, to each three-battalion regiment of the line is attached a two-battalion landwehr regiment. The landwehr regiments during peace exist only in *cadre*, that is, retain in active service only a com-

This development of the military organization of Germany was decided upon, it is said, in consequence of the creation of our territorial army. Our neighbors took the matter seriously, considering this an actual army, and endeavored to put themselves in condition to face the new force. Thus the formation of the landwehr into divisions and corps is, it appears, quite in a state of readiness.

It is even admitted that in time of war this term landwehr will disappear, and that with the troops of this class will be formed:

Army of Field Reserve.—1st. An army called a *field reserve*, comprising 366 battalions (of 800 men each), 122 regiments, 61 brigades, or 30 divisions. However, these divisions are not grouped into army corps; they are then designed to form separate fractions.

Their office will no doubt consist *in reinforcing the armies in the field*, or in discharging some special duty, such as occupying fortresses or guarding frontiers. Thus it is designed to have one division at Strasburg, one at Mayence, two, perhaps, at Berlin, two upon each frontier, etc.

Army of Garrison Reserve.—2d. An army called a *garrison reserve*, composed of 129 battalions (comprising 66 battalions of landwehr, 23 of landwehr reserve, and 40 fourth battalions) with certain depot troops.

Finally these masses are supplemented by special troops, such as *feldjäger*, trained railroad troops, etc., an account of which may be found in special works.

It is seen, therefore, that the character of this army has been very much changed since 1870, and that in

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manding officer, adjutant, and three clerks per battalion, and a sergeant-major and two other non-commissioned officers per company. —Tr.

general we do not form a sufficiently wide conception of its material strength.

To sum up, it follows from the preceding that in Germany the military organization is regulated by an attentiveness, a persistency, an energy, and a practical good sense, which place the wants of the army before all other considerations.

Two ends seem constantly to be pursued:

1st. To have in first line the greatest number of men who have served three years.*

2d. To have more disposable effectives in the field than her neighbors.

It was to reach this result that, following the organization of our territorial army, the Germans formed two reserve armies, the one to act in concert with the army in the field, the other to occupy territory in rear.

In reality, despite our own efforts, we find in the twelve and a half contingents at the disposal of the German army, and in the manner of employing the landwehr, subjects for serious reflection.

§ 5. ORGANIZATION OF THE PRINCIPAL EUROPEAN ARMIES.

Italy.—The establishment of compulsory service in Italy dates from 1869.

The organization of the army was so contrived as to make it a means of intermingling the different populations and bringing about national unity.

The principles of the Prussian military system were applied in 1875, but the fundamental law, modified in 1882, has not been in force for a sufficiently long period to permit a fair judgment of the results.

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*This field force contains 77 per ct. of men having served three years, 10 per ct. of those of two years' service, and 13 per ct. of those having served but a single year.

The war forces are, however, already strong. The field forces comprise *the active army with its first reserve and its mobile reserve*, which are composed only of instructed troops, namely:

Active Army: 3 contingents of 75,000 men, producing.	217,000 men.
First reserve of active army, 3 contingents, producing .	328,000 "
Total	545,000 "
Mobile Militia: 4 contingents	240,000 men.
12 contingents of one year volunteers	10,000 "
Total	795,000 "

Of whom 638,000 (about 80 per cent.) have served 3 years.
" 72,000 (about 9 per cent.) " 2 years;
" 85,000 (about 10 per cent.) " 1 year;

It is to be noted that the great majority of the troops of the first line have seen three years of service.

We observe, then, that Italy has made considerable effort to compensate for lack of numbers in her first line troops by improving their quality. We shall also see further on, that, thanks to peculiar circumstances, she has even succeeded in organizing a kind of advanced-guard army which remains permanently upon a relative war footing, the presence of which near our frontiers is not always free from inconvenience.

This power could have in addition, in second line—

Troops of First Category.

Territorial Militia: 7 contingents having served 3 years.	375,000 men.
One year volunteers, 7 contingents having served 1 year.	7,000 "
Total	382,000 "

Troops of Second Category.

Second reserve of the active army or troops for filling vacancies in this army in time of war: 5 contingents of 44,000 men having served 6 months	206,000 men.
Reserves of mobile militia (troops to fill vacancies in this force): 4 contingents of 6 months' service	150,000 "

Territorial militia: 10 contingents composed of troops of 6 months' service	326,000	men.
Total	682,000	"
Troops of second line (first category)	382,000	"
Total	1,064,000	"

However, of this number, the troops of the first category only can form combat units; the others will serve but to fill vacancies.

Finally, in third line come 19 contingents of 60,000 men each, exempt from peace service.

Yet, notwithstanding these figures, Italy could rely for her field force only upon the troops of the active army and of the first category; but the number of these, however, already reaches the respectable proportions of 1,770,000 instructed men.

Austria.—In Austria the application of compulsory service dates from 1868, two years after Königgrätz.

The law, modified in 1882, gives to-day as troops of the first line:

Active army: 3 contingents of 95,000 men of 1, 2, and 3 years' service (25,000 constantly on furlough)	275,000	men.
Reserve: 7 contingents of 94,000 men of 3 years' service.	565,000	"
Landwehr: 2 contingents of 94,000 men of 3 years' service	147,000	"
One year volunteers: 12 contingents of 3,500 men	37,000	"
Total troops of first line.	1,024,000	"
Of these 749,000 (or 73 per ct.) are reservists and landwehr troops.		
Troops of second category and of second line (with the recruiting reserve estimated at 94,000 men)	251,000	"
In all	1,275,000	"

For economical reasons, the period of service is each year shortened in the case of about 25,000 men.

Of the 1,024,000 men of the first line:

568,800 (or 55 per ct.) have served 3 years.
323,200 (or 30 per ct.) " 2 "
132,000 (or 12.8 per ct.) " 1 year.

In the Austrian army, then, scarcely one-half of the first line troops have served three years, which in a certain measure is a cause of weakness. In this country, the military development seems to have arrived at the limit of fiscal resources—a limit which sooner or later will be reached by all European nations, and at which they will be obliged to call a halt.

Russia.—In Russia, the general law of organization was adopted in 1874 and supplemented in 1876. It prescribes compulsory service from the twentieth to the fortieth year.

When in full operation it will yield:

Active army: 5 contingents of 185,000 men of from 1 to 5 years' instruction . . . . . 869,000 men.
Reserve: 10 contingents of 185,000 men of 5 years' instruction . . . . . 1,481,000 "
Militia, first call: 4 contingents of 185,000 men of 5 years' instruction . . . . . 513,000 "
Total. . . . . 2,863,000 "

Of these,
2,500,500 (or 87 per ct.) will have received 5 years' instruction.
177,500 (or 6 per ct.) " 2 "
185,000 (or 6.4 per ct.) " 1 "

In the above total, we see that 1,994,000 (69 per ct.) are reservists and militiamen.

This power would have in addition 340,000 second line or depot troops, having received one year's instruction. These would, of course, be susceptible of being enrolled in the combat units.

Finally, there remain 1,619,000 uninstructed men who would yet be available for military purposes.

This gives a total of 3,822,000 soldiers, of whom 2,203,000 are instructed.

This mass of troops would be formidable if, in estimating the war strength of this nation, it was not necessary to take into account the very limited number of its railroads, compared with the vastness of its territory, its incessant struggles in Central Asia, and the large detachments which it must keep permanently upon its Asiatic frontiers.

We shall see later, in considering the subject of its mobilization and its transport service, how large would be the effective forces disposable for a European campaign.

England.—This country has preserved its special organization of voluntary enlistment, which gives to its army a unique character. It can, under its last law, framed in 1881, mobilize in Europe 238,000 men, who are all well-drilled and efficient except the class of recruits forming a part of the 184,000 troops constituting the regular army. But this state is obliged to detach 88,000 men to guard its foreign possessions. There will then be only 150,000 men available for a European war, supported by a reserve of 325,000 men, who have received barely a few days' instruction. The latter, moreover, can be employed only at home.

In fact, it is not certain that this nation, whose power is especially colonial and maritime, could bring a larger force than 60,000 troops into the field in case of a continental war.

In the Crimea it engaged to keep up a corps of 40,000 auxiliaries.

In Egypt, in 1882, the English army mobilized only 25,000 men, 2,000 of whom were from the militia reserve. These troops were reinforced by a mixed division of the India army 7,000 strong, 3,500 only of whom were combatants.

Finally, there remain to be considered the war forces of a nation that Germany has twice endeavored, not

without success, to enlist among our adversaries—our immediate neighbor, Spain.

Spain.—The organic military law dates from 1882. As in Germany, Italy, and Austria, service is obligatory for twelve years.

When in complete operation, this system will give:

Active army: 3 contingents of 35,000 men having 1, 2, and 3 years' instruction	102,000 men.
First reserve: 3 contingents of 35,000 three years' instruction men	93,000 "
Second reserve: 6 contingents of 35,000 three years' instruction men	171,000 "
Total	366,000 men.

This army will have, moreover, a reserve of 262,000 uninstructed men who will form a territorial force, thus leaving the active army entirely independent.

The state of instruction of this army is difficult to estimate, for the Minister of War can send to their homes at the end of two years and three months, all infantry soldiers considered sufficiently well drilled.

At the present time there are only 250,000 instructed men. But taking into consideration the military qualities of the Spanish people, France would be obliged, in case of war, to maintain a like force, and to seriously undertake the defense of her southern frontier.

France.—The examination of these military forces would be without much utility, if we did not compare them with our own.

At the outbreak of war, France would have as troops of the first line:

Active army: 5 contingents of 140,000 men having from 1 to 5 years' instruction*	657,700 men.

*The annual contingent is divided by lot into two *portions*, the first serving the full term of five years, the second receiving but a single year's training.—TR.

Reserve: 4 contingents of 140,000 men, having from 4 to 5 years' instruction	476,300	men.
Total	1,134,000	"
Permanent part	120,000	"
Total	1,254,000	"

In the above are included 9 contingents of the second portion; 9 contingents each of 5,000 volunteers having one year's service on an average; and 1 entire contingent of the first year: making a total of 385,000 men, or about 31 per cent.

But by subtracting from these the youngest class, which furnishes depot troops, we change this proportion to 18 per cent.

There would then remain: 1 contingent having two years with the colors, or 8 per cent; and 760,000 men, or more than 60 per cent. having from 4 to 5 years' training.

Resume of the Preceding Data.—The foregoing facts offer instruction upon the subject of the solidity and cohesion of armies which should not be neglected.

If, indeed, we leave out of view Spain, whose army is in process of transformation, and England with her distinct system, we see that Russia is in advance of all the powers in the possession of well-drilled troops; but difficulties of mobilization present a counterpoise to this advantage.

After Russia, come Germany and Italy. As far as possible these States take care to relegate to the depot or second line troops, all those who have not received complete military instruction, with a service of at least three full years. In this connection, the military power of Germany, favored by a persistent and enlightened policy, has reached a remarkable development. France

and Austria are the powers whose armies of the first line contain the least number of thoroughly trained men; and it is unfortunately ours which has among its war forces the largest comparative number of soldiers having but one year's service.

As regards the reservists, we can form no adequate idea of their influence upon the effectiveness of the first line by a mere statement of their numbers; for, instead of comparing them with the total number of mobilizable men, we should rather see in what proportion they enter into the tactical units.

In this regard Germany still has the advantage. Thus her infantry company, which in time of peace numbers a real effective of 135 men, receives, in order to pass to a war footing, only 115 reservists. These have all, moreover, spent three years with the colors.

Ours, which comprises a normal effective of 75 men, receives 175 reservists, about one-fifth of whom have received only one year's instruction.

This is not, however, the only point of view from which we may properly compare the actual strength of European armies.

It should be remembered that Germany includes in her first line forces twelve and a half classes, averaging about 160,000 effectives each; that there is no longer a difference, regarding field service, between her active army and her landwehr; that the second line exists in cadre, and, like the first, is grouped into grand units: whence the war forces for service beyond the frontier, to-day reach the extraordinary figure of two millions of men.

Russia has fifteen classes of 247,000 men each, or, even with allowances for all casual decrements, more than three millions.

Austria can muster twelve contingents of 123,500 each, or 1,400,000 men.

Italy's war resources are twelve classes of 120,000 men each, or about 1,380,000 men.

Finally, France has but nine classes of 140,000 men each, giving a total, after allowing for contingencies, of about 1,200,000 men. This deficiency could be immediately remedied by including in the war forces which can be sent beyond the frontier, the three youngest contingents of the territorial army, thus giving us twelve classes.

§ 6. THE COMMAND.

The skillful organization of the command is one of the prime elements of an army's strength. It rests upon a fundamental principle, *unity in the command*, or, using Napoleon's happy expression, *unity of the military thought.*

I.—Unity in Command.

This principle constitutes a rule without exception. It is absolute. In peace as in war, it is the basis of all good army organization. But it is especially in the field that its neglect may cause irreparable disasters. It has been many times proved that the only effect of multiplying the number of chiefs called to deliberate upon a plan, is to furnish each the means of escaping responsibility in difficult circumstances. It rarely happens that, in the hour of danger, the execution does not suffer by such a procedure.

This truth is so clear as apparently to require no demonstration. However, in practice, the application of the principle is not always evident, and in many situations the command is surrounded by such difficulties as seem to make its employment impossible.

History furnishes us, indeed, many examples in which the neglect of this rule of unity in command has proved fatal.

Division of the Command in the Case of the Army of Italy in 1796.—In the spring of this year, when Bonaparte, scarcely 27 years of age, had conquered Lombardy, the Directory, fearing his prestige, resolved to divide the army of Italy into two parts, and place one of them under Kellermann.

Bonaparte then wrote to this body the following letter, which caused it to abandon its design. It contains the complete views of the great warrior upon the subject of unity in command:

"HEADQUARTERS, LODI, 25 FLORÉAL, YEAR IV.

"I have just received the dispatch which left Paris on the 8th.

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"I believe it very impolitic to divide the Army of Italy into two parts; it is equally contrary to the interests of the Republic to place two different generals here.

"The expedition to Leghorn, Rome and Naples is a very small matter; it ought to be made by divisions in echelon, so that they might, by a retrograde march, appear against the Austrians in force and threaten to envelop them upon their first attempt at moving.

"Not only is a single general necessary for this, but there must be nothing to interfere with him in his marches and operations. I have so far made the campaign without consulting any one; I might not have succeeded at all if it had been necessary to reconcile my views with those of another * * * * *

"If you trammel me in every way; if I must refer all my projects to commissioners of the Government; if they have the right to change my movements, to remove troops from my command, or to supply them at their pleasure, do not count upon further successes. If you weaken your means by dividing your forces, if you interrupt in Italy the unity of military thought, it pains

me to say, you will lose your most brilliant opportunity of imposing your authority upon this country.

"In the present condition of affairs in Italy, it is indispensable that you should have a general possessing your entire confidence.

"If I should not be the one, I shall not complain of it; but shall exert myself with redoubled zeal to merit your esteem in any post intrusted to me. Each one has his own method of carrying on war. General Kellermann has more experience, and would conduct it better than I; but both together would do it very poorly."

Bonaparte on the same day supplemented this letter by another, equally explicit, addressed to Carnot:

"I am writing to the Directory with reference to the idea of dividing the army. I assure you that in my letter I have had only the country in view. Moreover, you will always find me in the straight line. I owe to the Republic the sacrifice of all my own ideas. If they try to put me in a bad light with you, my reply is in my heart and in my conscience.

"As it is possible that the letter to the Directory may not be properly interpreted, and as you have given me proof of your friendship, I have resolved to address it to you, begging you to make whatever use of it your prudence and your attachment to me may suggest to you.

"Kellermann will command the army as well as I, for no one is more convinced than I am that our victories are due to the courage and audacity of the army; but I believe that to unite Kellermann and myself in Italy, is to court the loss of everything.

"I cannot willingly serve with a man who thinks himself the first general in Europe; and, besides, I believe it would be better to have one poor general than two good ones. War is like government—it is a matter of tact."

Command of the Armies in Spain and Portugal in 1812.—In 1812, however, in entire forgetfulness of the principle which he had so clearly enunciated, Napoleon committed the mistake of ordering the Army of Northern Spain, under Bessières, to go to the assistance of the Army of Portugal, under command of Marmont, without deciding which of these marshals should be commander-in-chief.

This condition of affairs created serious embarrassments, and became an obstacle to successful operations.

Marmont considered it his duty to comment upon the situation in bitter terms in a letter to Major General Berthier:

"His Majesty supposes that in case of an offensive movement on the part of the English, the Army of the North will support that of Portugal by two divisions; but can the Emperor be persuaded that in the existing state of affairs these troops will arrive promptly and in time?

"The enemy is taking the offensive: the one who should meet him, prepares the means of doing so; the one who should act conditionally, waits without uneasiness, and permits precious time to slip away as a pure loss. The enemy approaches me: I bring my troops together in a methodical and precise manner; I know, almost to a day, when the bulk of the forces will be in line, when the rest will be in junction with me, and in conformity with these circumstances, determine to act or delay. But I can make these calculations only for the troops that are purely and simply under my orders. For those that are not, what tardiness, what uncertainty, what loss of time!

"I give notice of the approach of the enemy, and ask support: I am answered by comments upon the situation; my letter reaches its destination slowly, because the communications are difficult in this country; the second reply will be like the first, and the enemy will be upon me.

"I can take into account only those that are immediately under my orders; and, since the troops which are not so, are yet necessary in order to give battle, and are counted as part of the force which I should oppose to the enemy, I am in a false position, and have the means of doing nothing systematically and understandingly."

This condition of affairs resulted from the Emperor's habit of commanding everything in person. He considered himself, even at Paris, as the real commander of the armies of the Peninsula, and sent his orders by his chief-of-staff, who also resided in Paris.

This example shows not only that unity of command should be maintained, but that it ought, moreover, to be exercised upon the very theatre of operations itself.

Command of Armies Composed of Different Nationalities.—The application of this principle presents still greater difficulties in the case of armies of different nationalities acting together in the same cause, or operating in distinct theatres of war.

In 1813, the Allies found themselves in this situation. When their forces took the field, nearly all the army corps were composed of troops of different nationalities. In each of these units national pride was over-inflamed, and orders given for common execution were not understood in the same way. There resulted such clashings that it was found necessary to give the command-in-chief to a generalissimo, and to agree that the rulers of Russia, Prussia and Austria should always be together at headquarters.

Good fortune or foresight led to the choice, for this high position, of an Austrian general whose rank overawed the other generals, and whose tact, kindliness and gentleness, says Marmont, dispelled even the slightest traces of friction throughout the command.

Command of the Allied Armies in the Crimea in 1855.—In this war the English, Turkish, Piedmontese, and French armies were operating together against the Russians, each preserving its independence.

So many obstacles stood in the way of co-operation, that Marshal Canrobert, commander-in-chief of the French army, was prompted to report the facts to the Minister of War in the following terms :*

"To-day, when the question arose of definitely deciding upon the basis of apportionment of troops, Lord Raglan did not appear to think that in view of the necessity of holding his trenches, protecting Balaklava, etc., it was possible for him, with his effectives and the Piedmontese army, to form a corps to be concentrated at Baïdar.

" Thus, after so many and such laborious discussions, when it is a question of passing from theory to execution, difficulties arise which, since the commencement of this war, have been incessantly recurring, disturbing the situation continually and delaying the conclusion of the struggle. It must be admitted, however, that all crimination would be unjust and out of place here : equally with myself, Lord Raglan and Omar Pacha bring goodwill, conciliatory sentiments, and ardor to the task of advancing the success of the common cause. But the difficulty of introducing harmony into our views, our various prejudices, and our instructions (which are not absolutely identical, or which at least give rise to divergent opinions in their interpretation), is one of the greatest that can be imagined in war. It is necessary to add to this the perplexities which are presented in the execution of any plan, on account of the very different instincts and equally different dispositions to be met with in troops of distinct nationalities, commanded by generals possessing equal powers.

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* General Pierron, *Méthodes de Guerre*, vol. i., p. 125.

"I could produce a hundred examples drawn from this war in support of these familiar truths."

The French government hastened then to give the command-in-chief to Marshal Pélissier, who of all the generals of the time best understood how to impose his authority and will.

Parity of Grade.—One of the most serious impediments in the way of unity in command is parity of grade.

When this exists between different leaders in an army, it is only by force of character that the commander-in-chief can compel obedience. To avoid these difficulties, many of the powers have created, after the example of Germany, special grades for corps and army commanders. They thus have four grades of generals: major-generals for brigades, lieutenant-generals for divisions, generals, properly speaking, for corps, and field-marshals for armies.

Under the Consulate we also had chiefs of brigade, generals of divisions, lieutenant-generals, and generals-in-chief. The lieutenant-generals, however, disappeared under the First Empire. From that time, the misunderstandings between the corps commanders and the marshals continually increased; and the presence of the Emperor was almost always necessary to put a stop to them.

One of the most striking examples of these dissensions is afforded by the conduct of Marshal Ney in Portugal in 1811.*

Command of the Army of Portugal in 1811.—In this year, when Masséna was forced to abandon the investment of the lines of Torres-Vedras, and to return to Spain, the situation of his army was most critical. Privations and lack of food had occasioned many acts in violation of

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*General Pierron, *Méthodes de Guerre*, vol. i., p. 133.

discipline. Nevertheless, by the end of March, after a skillful retreat, which had brought back a certain vigor to his troops, Masséna, with characteristic stubbornness, resolved to take the offensive on the Tagus. He immediately gave his orders to this effect.

The disapprobation of his lieutenants then manifested itself in the most disagreeable manner, and Ney, the only marshal among them, so far forgot himself as to become the mouth-piece of the general complaints.

On the 22d of March, he addressed to his chief an insubordinate letter, which contained an express refusal of obedience. Masséna, notwithstanding his strength of character, was indulgent. His vigor of action had, too, become in a measure impaired, perhaps, by his long and constant service. He did not reply. At six o'clock on the evening of the same day, Ney wrote a letter in which he announced his resolution to leave on the next day with his corps, in a direction different from the one prescribed.

Masséna hesitated no longer. Yet, mindful of his former friendship for his old companion-in-arms, he warned the latter that persistence in disobedience would necessitate the adoption of suitable measures to make his authority respected.

Ney had gone too far to recede. He believed, moreover, that Masséna was incapable of taking vigorous action against him, and flattered himself that he would be able to associate the troops of the 6th Corps with his disobedience. He persisted in his refusal. Masséna then took from him the command of his corps, and bestowed it upon the senior division commander; forbade the generals of division to obey him; enjoined them to conform to the instructions coming directly from the general staff; made them personally responsible for all infractions of his own orders; and commanded Ney to repair to Spain, there to await the action of the Emperor.

Ney was then so culpable as to write the following letter to his chief: "The Emperor having confided to me the command of the 6th Corps, no one but his Majesty has the right to take it from me. I again protest against this new disposition. However, if the division generals of the 6th Corps obey you, I will return to Spain."

The generals obeyed. Masséna, on his part, held to his decision, notwithstanding two new protestations and the pain which he felt in the matter. Ney was obliged to leave the army and go back to Spain.

Two years afterwards, Ney, being himself in command in Lusatia of three army corps whose commanders were nearly his equals in rank, was unable to make his authority recognized, and felt obliged to complain of this to the chief-of-staff, to whom he wrote the following letter:

"It is a duty which I owe to myself to declare to your Serene Highness that it is impossible to make use of a large part of the 4th, 7th and 12th Corps, in the present state of their organization. Nominally, they are united in a single body, but they are not so in fact. Each of the generals-in-chief does about what he thinks proper for his own safety; things are thus at such a pass that it is very difficult to act effectively. The *morale* of the generals and of the officers on the whole, is singularly unsettled. To command under these circumstances, is only to command in half, and I would rather be a grenadier.

"I beg you to obtain the Emperor's consent that I may either be the sole commander-in-chief, having but the division generals under my orders, or that his Majesty will have the kindness to remove me from *this hell*. I have no need, I believe, to speak of my devotion. I am ready to shed every drop of my blood, but it must be to some purpose.

"In the existing state of affairs, nothing but the presence of the Emperor can re-establish unity, for all wills bow to his genius, and petty vanities disappear before the majesty of the throne."*

Rivalries in Command.—Rivalries in command result not only from equality of rank, but also from feelings of selfishness and jealousy which exist in all armies, whether in individuals, in certain bodies of troops, or in certain arms of the service. These sentiments are always blameworthy. They cause disorganization among the troops, prevent the leaders from accepting proffered aid in critical moments, or from hastening by forced marches to the assistance of a comrade in arms.

In 1870, at the commencement of operations, these sentiments more than once contributed to our reverses. There is then no doubt of this: in an army, it is a crime to entertain jealousies arising from a difference in the character of the service rendered.

To prevent the existence of such tendencies, it is a duty to keep alive in the corps of officers a sentiment of comradeship and esteem, based upon honor, upon pride in a noble profession, upon the conviction that the officers of an army form only one and the same family, whose union is a controlling condition of success.

Command of the Army of the Rhine in 1870.—In this year, the defective organization of the command-in-chief of the Army of the Rhine was one of the causes of our misfortunes.

The command given to Marshal Bazaine on the 13th of August, was limited exclusively to operations. The Emperor dispatched orders in all other cases, and from this resulted great embarrassments, which were reflected

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* General Pierron, *Méthodes de Guerre*, vol. i., p. 136.

upon all our movements. There should then be but one head to an army, especially in the field, and this head should always be upon the actual theatre of operations.

Civil Commissioners to the Armies.—Governments have sometimes conceived the idea of doubling the command-in-chief by the appointment of a civil commissioner invested with independent authority. This combination has always been vexatious and injurious. It was adopted under the first Republic, and caused reiterated complaints, even on the part of the commissioners themselves.

The Committee of Public Safety thought, in 1794, to obviate these inconveniences, by defining the mission of the representatives of the people to the armies, and by declaring that they ought to encourage the generals rather than take it upon themselves to give the latter orders.

This purely platonic dictum was without effect. The embarrassments still continued. Notwithstanding this experience, the Government of National Defence was guilty of the same error at the end of December, 1870. The inconveniences of the situation thus created were not long in manifesting themselves; and by the 2d of January, 1871, M. de Freycinet, War Delegate, was forced to write to M. de Serre, commissioner to the Army of the East under command of General Bourbaki, specifying to him clearly that he should have no part in the command.

Bodies of Troops Independent of the Commander-in-Chief.—The principle of unity of command is also opposed to the presence of independent bodies of troops within the theatre of operations.

Nevertheless, in 1870, we saw our generals sometimes obstructed in their movements by bodies of *francs-tireurs*, who after all caused the enemy more apprehension than actual damage.

General Chanzy was thus forced in December, 1870, to send a communication* to the Minister of War upon this subject, which gives an exact idea of the confusion produced by these independent troops.

"We are overrun by *francs-tireurs* who claim to have their orders direct from you, who will obey no one, who are a plague to the inhabitants, and whom I long to see in some position where they can be of service. I ask authority to dispose of them in my army's zone of action, and desire to know exactly what are the orders given directly to Colonel Lipowski, and what is the special mission he has to fill. In any case, I shall give him formal orders to leave the city of Mans. He would have been completely organized some days ago if he had not lost so much time."

The Office of Second in Command.—The principle of unity in command has often been violated by the creation of the office of second in command.

The consequences of this innovation, adopted especially in monarchical States, have always been pernicious.

They were very clearly set forth by Wellington in two letters, which are worthy of citation.†

Wellington to Marshal Beresford.

"FRENEDA, DECEMBER 2, 1812.

"I have always felt the inutility and inconvenience of the office of second in command. It has a great and high-sounding title, without duties or responsibilities of any description, at the same time that it gives pretensions, the assertions of which are, and I believe you know I found them in one instance to be, very inconvenient. Every officer in an army should have some duty to per-

*General Pierron, *Méthodes de Guerre*, Vol. 1, p. 138.

†General Pierron, *Méthodes de Guerre*, Vol. 1, pp. 136 and 137.

form for which he is responsible; and I understand a general officer commanding a division or a large body of troops to be in this situation. The second in command has none that anybody can define; excepting to give opinions for which he is in no manner responsible, and which I have found one at least ready to relinquish when he discovered that they were not liked in England."

Wellington to Earl Bathurst.

"FRENEDA, JANUARY 26, 1813.

"In my opinion, the office of second in command of an army in these days, in which the use of councils of war has been discontinued, and the chief in command is held responsible for everything that passes, is not only useless, but injurious to the service. A person without defined duties, excepting to give flying opinions from which he may depart at pleasure, must be a nuisance in moments of decision; and whether I have a second in command or not, I am determined always to act according to the dictates of my own judgment, being quite certain that I shall be responsible for the act, be the person who he may according to whose opinion it has been adopted.*"

The principle, then, of unity in the directing thought does not admit of exception. But once its application is assured, the strength of the command depends upon the personal qualities of the general-in-chief—upon his character, and certain faculties whose union, often difficult to find in the same man, is nevertheless one of the surest guaranties of success.

II.—Qualities Essential for the Exercise of Command.

In connection with the organization of the command, it would be going beyond the scope of this work to enter

*General Pierron, *Méthodes de Guerre.*

into a full discussion of the qualities which should distinguish a general-in-chief.

However, it may be advantageous to know the ideas which are current upon this subject in Germany.

They may serve as a means of comparison in measuring our own views, and there is perhaps no officer who will not be able to draw profit from them.

Intelligence and capacity are often regarded as the chief qualities of a military leader. This is generally an error.

In the first place, there are no chief qualities. The qualities necessary for a commander of troops vary according to the circumstances in which he is placed.

This much is certain: with a commander, qualities of character have the greatest weight.

Two of these are held by the Germans in esteem beyond all others: *decision* and *good sense.*

The ability to form a clear resolution without hesitation, and to put it into execution, is indeed an eminent virtue, especially in a military leader. It is what Verdy du Vernois calls *clearness in conception and energy in execution.* These qualities sometimes meet in ordinary men, when by study and reflection they have acquired the faculty of clearly comprehending the various situations that are constantly being presented.

Decision.—One of the most remarkable examples of decision in a commander-in-chief was that given by Prince Frederick Charles on the evening of 2d July, 1866, when he resolved to attack the Austrian army.

On this date, the advanced-guards of the Prussian and Austrian armies, posted upon the right bank of the Elbe, were less than seven kilometres [from 4 to 4½ miles] apart, and yet the first army did not suspect that the adversary was so near and so concentrated.

On the Prussian side, it was thought that the bulk of

the enemy's forces occupied a position beyond the Elbe, with its wings resting on the strong places Josephstadt and Königgrätz. At the general headquarters, therefore, there seemed no alternative but to attack this position or to so manœuvre as to oblige the defenders to leave it.

However, the staff of the I. Army, which was the most advanced, realized, during the 2d of July, that it was absolutely essential to obtain more definite information of the enemy. For this purpose it sent out small detachments, on different sides, which for the greater part were directed upon Königgrätz.

Patrols of well-mounted officers were charged with gathering details of the strength and position of the adversary's forces. One of these penetrated beyond the screen formed by reconnoitring cavalry, and found the height of Dub near the Bistritz strongly occcupied. It ascertained that the Prohaska brigade was posted there.

From prisoners it was learned that four Austrian corps were in the vicinity.

An officer of hussars discovered extended bivouacs, and was able to locate a hostile corps at Sadowa.

All this important information reached the headquarters of the I. Army between six and seven o'clock in the evening. There was a temptation to transmit it to the generalissimo and await his orders. But, thanks to the decision of the general-in-chief, it resulted otherwise.

Although the day was far advanced, and although instructions had already been sent from the King's headquarters for a general flank march toward Pardubitz, Prince Frederick Charles at once determined upon a contrary course.

Large masses of the enemy were in his vicinity; it was therefore essential that his troops should concentrate immediately, in anticipitation of what was to take place on the morning of the 3d.

Consequently, without heeding either the night or the bad weather, the Prince, at nine o'clock in the evening, dispatched orders to his different corps to be in position at two o'clock in the morning in the vicinity of the Bistritz, ready to attack the Austrian positions.

After having sent these orders, his chief-of-staff set out for Gitschin, where the general headquarters of the King were located, arrived there at eleven o'clock at night, gave an account of the situation and the dispositions made, and asked the judgment of the generalissimo.

The King of Prussia showed no more hesitation than Prince Frederick Charles, and at once resolved to attack with all his forces, without anxiety as to whether the entire Austrian army was before him, or only a few of its corps.

The victory of Sadowa was due in great measure to the energy and promptness of these decisions. They resulted in giving the initiative to the I. Army, and in bringing the II. Army upon the enemy's right flank at an opportune time.

After decision, one of the qualities which contributes the most to success is *stubbornness.*

At the end of a day of battle, after a prolonged contest which has exhausted the combatants on both sides, the general who has the energy to sound the charge, and to hurl his remaining effective troops, with bayonets fixed, upon the enemy, is almost certain of success. This was especially the opinion of General Grant,* one of the men of our time who have given us the most remarkable examples of stubbornness.

"I have often heard General Grant declare that there arrives a moment in every closely contested battle when the two opposing armies are nearly exhausted by their

* General Pierron, *Méthodes de Guerre*, Vol. I., p. 22, § 3.

efforts, and when it seems that each can do no more. That, in his opinion, was the decisive moment; and the general-in-chief who had enough determination to then take the offensive, was sure to prevail."

The stubbornness displayed by the Prussian officers in 1866 and 1870, especially on the offensive, was a conspicuous cause of their success.

In this regard, moreover, there exist in this army proud traditions which each endeavors to perpetuate.

Marshal Blücher boasted of his obstinacy, and wrote in 1815:*

"Paris is in my power; the French army retires behind the Loire, and the capitol is delivered to me. It is to the incredible bravery and unparalleled energy of our troops, as much as to *my own iron will*, that this triumph is due. Criticisms and complaints upon the exhausted condition of the troops have rained upon me; but I have remained deaf to them all. I knew by experience that we could gather all the fruits of a victory only by pursuing the vanquished without relaxation or delay."

In more recent times, the Prussians have given remarkable examples of tenacity.

That furnished by General Fransecki, commanding the 7th division of infantry at Königgrätz, deserves especial notice.

Placed at the extreme left of the line of battle of the I. Army, in the Swiepwald or wood of Maslowed, and engaged since eight o'clock in the morning, this division towards eleven o'clock found itself in presence of the enemy's constantly increasing masses. They belonged to two Austrian corps, the 2d and 4th, which had allowed themselves to become engaged little by little, and had finally brought into line 51 battalions and more than 100 guns.

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* General Pierron, *Méthodes de Guerre*, Vol. I., p. 21, §4.

To resist this powerful effort, the 7th Division could count only upon its own troops. Its centre first gave way, and it was then feared that the wings would be driven asunder. Soon the companies became intermingled and divided into groups, which under the lead of their officers attempted to maintain themselves upon various points along the borders of the woods. Some of them found themselves menaced at the same time in front, on the flanks, and in rear. They succeeded, however, in holding the ground in the northern part of the woods.

"In the midst of alternate successes and reverses," says the Prussian narrative, "the companies which fought in the depths of the woods had finally become thoroughly commingled. Moreover, as it was impossible to see to the front, and therefore to give a systematic direction to the contest, the leaders were obliged to confine their efforts to setting personal examples.

"At all points the officers assembled around them the men whom they had in hand, no matter to what regiment belonging, and led them forward. The troops which had been driven from the woods were ordered back, except those completely disorganized, which were placed in reserve. Large numbers of Austrian prisoners were continually being sent to the rear; but increasing streams of the wounded and of men who had lost their leaders were also finding their way there."

Already more than 2,000 men were *hors de combat*, and General Fransecki had vainly called for support. But, comprehending the importance of the point occupied, he inspired all those surrounding him with the firm resolution to defend to the last extremity the ground upon which they had already poured out so much blood.

The leaders gave the example, and the resistance continued.

Fortunately the approach of the II. Army was soon announced, and the cry, *The Crown Prince is coming*, ringing through the thinned ranks of the defenders of the woods, reanimated the exhausted troops.

But this succor was still at a distance. The 7th Division was in a most critical situation. It became necessary to dispatch an officer toward the columns of the II. Army to ask that the much-needed aid be immediately sent forward. This officer, in carrying out his orders, was obliged to gallop through the lines of the enemy's sharpshooters.

He succeeded in his perilous mission, and a few minutes after, the Prussian Guard, taking the Austrian masses under artillery fire, extricated General Fransecki.

It was by its stubbornness that the I. Army escaped having its left broken and its communication with the II. Army interrupted.

With certain peoples, the English for example, tenacity has become a national virtue. Wellington is among those who, by the firmness of their character, have contributed the most to this result.

He wrote upon this subject to Lord Clarendon, in 1811:*

"No one is better able than you to appreciate the difficulties with which I have had to contend (during the period of Masséna's expedition in Portugal); but, I believe, you are not acquainted with all of them. I have persevered in the system which seemed to me the best, notwithstanding the opinion of every officer of the English army in Portugal was, that I ought to evacuate the country and re-embark for England; while, on the other hand, the Portuguese civil authorities contended that I should maintain the war upon the frontier in place of

*General Pierron, *Méthodes de Guerre*, Vol. I, p. 22, § 2.

coming within the lines of Torres Vedras, in spite of the consideration that we lacked, for this purpose, not only material forces, but also the means of providing for the wants of the only Portuguese troops which could be put on foot. It is only by inflexible firmness that I have for nine months resisted the discussions of opinions contrary to my own. Add to this, that public opinion in England on this subject was almost as variable as the wind, and you will realize that I could rely only upon myself."

It has often been said that the French character, naturally impressionable, has not this stubbornness in action, which is so powerful a guaranty of success. We have all manner of faults ascribed to us, especially since our defeats. How many times has it been represented that we allow ourselves to be easily influenced by appearances during battle, and are often led to consider as lost, positions which are not even endangered?

To this, there is only one reply: When we were conquerors, it was quite another thing. "The tenacity of the French," says General Marbot, "was called in question before the wars of the Revolution; it is, however, one of the principal virtues which they displayed there, and one of the first causes of the numerous victories which they won during a period of twenty-seven years. The persistency of our generals contributed very much to these results, for this quality exercises a great influence upon the fighting capacity of the soldiers, who soon become acquainted with the character of their general. And when they realize that he will order a retreat only in the last extremity, and will lead them back eight or ten times to the charge, before considering himself beaten, they make their first attacks with more determination, and gain victory more frequently, than troops which, although unshattered themselves, are yet accustomed to retreat, because not able to drive back the enemy in one or two attacks."

The wars of the first part of this century offer examples of this military virtue, unsurpassed by any other age.

Was it not, moreover, to this that Napoleon owed his victories in great part?

The uniform and complete successes of Napoleon, says Rocquancourt, ought to be attributed :

1st. To his incomparable skill in creating, assembling, organizing, and vivifying, the means of war, proportionate to the grandeur of his enterprises;

2d. To an activity which always assured him the initiative;

3d. To a rapidity of perception and of action, which left to the enemy neither opportunity for reflection nor time to check his designs;

4th. To the best possible *use of masses.*

5th. To that *ascendency* which he exercised from the outset, as well over his adversaries as over his own troops, and which increased with his growing authority and his ulterior successes;

6th. To a *tenacity* which he knew how to *communicate to all*, and which, with him, was as much the result of reflection as a natural gift.

It was a principle with him, when an action was commenced and while nothing was yet decided, that it was better to continue the combat and to consent to new sacrifices, than by a premature retreat to render of no avail to the country the blood of the men already slain.

This principle, far from being inhuman, results in avoiding fresh sacrifice of life.

"*Before conceding the victory, let us wait until it is snatched from us,*" said Napoleon; "*before retiring, let us wait until we are forced to do so.*"

His personal opinion upon the qualities requisite in the commander ought not, moreover, to be passed by in silence.*

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* General Pierron, *Méthodes de Guerre*, Vol. I., p. 14, §§ 2 and 4.

"The first quality of a commander-in-chief is the possession of a cool head, which receives correct impressions of things, which never becomes over-excited, which does not permit itself to be intoxicated by good nor bewildered by bad news; a mind in which the successive or simultaneous impressions received during the course of a day classify themselves, and take only the place they should properly occupy; for good sense and reason are the result of comparing several sensations, weighed with equal consideration.

"There are men who, from their physical and moral constitution, are unable to form practical views upon a subject; whatever knowledge, intelligence, courage, or good qualities of any kind they may possess, nature has not called them to the command of armies nor to the direction of grand operations of war.

"It is necessary that a warrior have as much character as intellect; men who have a great deal of intelligence and little character are the least adapted for war; they are like ships with masts disproportionate to the ballast ; it is better to have a great deal of character and less intelligence. Men of mediocre minds and corresponding character will often succeed in this profession: there should be as much base as elevation. Cæsar, Hannibal, Turenne, Prince Eugene, and Frederick, were men who possessed both character and intelligence in a high degree.

"It is will, character, application, and audacity, which have made me what I am."*

Difficulties of the Command in our Time.—Whatever may be the qualities required in those to whose hands the command is entrusted, it is not without interest to observe that in our time, these qualities ought to be still more highly developed than formerly.

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*General Pierron, *Méthodes de Guerre*, Vol. I., p. 16, § 3.

This results from the increase in the size of armies, the multiplicity of the elements composing them, and the enlarged dimensions of the theatres of war.

Frederick the Great commanded armies of from 30,000 to 50,000 men. Napoleon directed bodies of large size, but they usually acted in serried masses under his own eye.

To-day, a general-in-chief directs two, three or four armies of from 150,000 to 200,000 men each, or a total of nearly a million. In battle, he has difficulty in finding a point from which can be seen the movements of his entire operating forces. At all events, he is too distant to exercise personal control in the wings. Often, when he sends an order, the situation to which it refers is changed before the arrival of the bearer.

From this state of things will arise greater difficulties, requiring capacities of a wider grasp, greater skill in assuming the initiative, and above all a stronger and better disciplined will.

III.—Assistants to the Command.

We must conclude from all this, that henceforth the commanders-in-chief and the generals ought to be seconded by more carefully selected assistants than formerly—men whose military qualities are more highly tempered.

The Staff.—The first of these auxiliaries, and one whose co-operation is most vital, is the staff. We shall see later, on the subject of the organization of general headquarters, what are the ideas which seem to prevail to-day regarding the selection of a good staff. This body is especially a transmission agency. But the supreme command has also at its disposal, an executive instrument more useful and more important still. It is the *corps of officers.*

Corps of Officers.—The officers of an army are the soul of a body of which the general-in-chief is the head.

They arouse and develop the moral qualities, and sustain them at their maximum intensity. They exert this influence by the principles they propagate, the traditions they keep alive, the example they set, the individual authority they exercise, and the prestige they acquire. They have thus a strong personality; and notwithstanding their dispersion, their influence upon the results of a war is signally important.

To-day, with our large effectives, with the wide development of armies upon the battle-field, the corps of officers will exercise a still more important control over the success of the operations.

They are the creators and the guardians of the military spirit, of the convictions of the soldiers, of their enthusiasm, of their energy.

They constitute a formidable organ that can of itself alone gain battles; that, consequently, should be guided with solicitude, and cultivated with jealous care; whose efforts should be encouraged and sustained, whose prestige raised, whose merits extolled.

For all these reasons, it will be profitable to seek out and analyze, briefly at least, the conditions essential to the existence of a good corps of officers.

Qualities of the Corps of Officers.—"In the first rank of these qualities should be placed obedience. Some wish it passive and complete, warm and devoted; others prefer a cold, reflecting, arguing obedience, following the sense and spirit of the instructions."*

Passive and Reasoning Obedience.—General Bedeau rejected the principle of unqualified and irresponsible obe-

*General Blondel.

dience as an obsolete rule, good enough for the past. By a strange fatality, destiny has taken upon herself to answer his arguments. He perished in our civil discords, a victim of the ideas of revolt and insubordination.

These two estimates of the forms of obedience are often met with. In a good army, however, obedience ought never to be argumentative, even in intimacy.

The commander-in-chief and the generals permit only passive obedience.

There is, then, only one rule which properly sums up and simplifies the duties of the soldier:

"Under arms, the *law* is the command of the responsible chief, as the *country* is the flag.

"This rule governs in the armies of republican America, no less than in the armies of imperial Germany and of autocratic Russia. It has governed in the same way in all armies, ancient and modern. History constantly exhibits to us as enfeebled and conquered, the peoples that have turned away from it; for outside of it, there is no discipline, and without discipline, no hope of success.

"In order then that an army may be strong, it must be united; to be united, it must be obedient, energetic, devoted. By this alone is that harmony of efforts assured which creates its power, and which, in peace as well as in war, maintains it at a height in keeping with the nobility of its mission.

"Let it not be said that such obedience abases the character. The contrary is true. Military obedience is noble, for it is enjoined by devotion; and devotion reaches, in case of need, even to the sacrifice of life.

"Thus a good soldier owes, above all, obedience to his superiors, confidence in their orders, a decided wish to have them executed; obedience in fact and from the heart, without reservation, without controversy, free

from lukewarmness; obedience even to the point of devotion; for it is necessary to make renunciation of his own thought and his own manner of seeing, in order to place his will and his intelligence at the service of another intelligence and another will."

In our noble and proud profession there can then be no doubt of this: *absolute obedience is a dogma.* "However active may be the intelligence of the Frenchman, however ardent his imagination, however sensitive his vanity, officer or soldier, he is only an instrument. It is not for him to know if his superior is fallible or not; he has only to obey. It is necessary to obey, for in reasoning one may perhaps be mistaken. It is necessary to obey, for in war hesitation is always fatal. In case of a wrong manœuvre, but one executed with decision and sustained with vigor, the enemy is often surprised and disconcerted, and a success is gained, over which the victor himself is sometimes more astonished than the adversary.

"With an enthusiastic nation like ours, we have everything to fear from hesitation on the battle-field; it destroys the chief element of our power in arms. We should obey, because an army's strength lies in its unity of action, and out of discussion comes discord. Finally, it is one's own interest to obey; whatever may be the results, he feels himself beyond reproach who can say, I have obeyed."*

An Order to Sacrifice One's Life.—In Vendée, on June 17, 1793, the Republican army under Kléber, had since sunrise been fighting in retreat before an enemy to whom acquaintance with this difficult country gave great advantage. Arriving toward evening at the bridge near Clisson, upon the Sèvre, which he wished to use as a protection for his retreat, the Republican general called

* General Blondel.

a chief of battalion, and ordered him to defend the bridge to the last extremity, addressing to him these harsh words : "*You are to die there with your battalion.*"

The latter replied simply: "*Yes, general,*" and he kept his word. He lost 200 men and was himself killed on the spot, but the army was saved.

Here was greater patriotism than in the most pompous speeches. We must not forget his name. This hero was Schouardin, the commander of the battalion from Saône-et-Loire.*

Obedience of Grouchy at Waterloo.—One of the most celebrated and, at the same time, unfortunate examples of passive obedience, was that given by Marshal Grouchy on June 18, 1815, the day of the disastrous battle of Waterloo. His conduct has caused the suspicion of treason to rest upon his memory; yet the following letter† which he wrote to the Emperor on the day after the battle plainly shows that he had not considered it his duty to modify one of Napoleon's orders. His greatest fault was in having lacked energy in the pursuit of Blücher, and in not having overtaken him.

"Sire, it was only yesterday, between six and seven o'clock in the evening, that I received the Major-General's letter dated June 18, 1 o'clock p. m., by which you ordered me to move upon Saint-Lambert to attack General Bulow.

"While I was in the act of writing to you, a cannonading was heard upon the left. Having been apprised by yourself, the evening before, when I took leave of your Majesty upon the battle-field of Fleurus, that you were to move upon the English and give them battle should they make a stand on this side of the forest of

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* General Blondel.

† General Pierron, *Méthodes de Guerre*, Vol. II., p. 758.

Soignes,—which your Majesty must have doubted, since you wrote to Prince Joseph at Paris that the English army was in retreat upon Brussels,—I was but little astonished at this cannonading, considering it a rear-guard engagement!

"I had just dispatched my letter to you, Sire, by one of your former pages, Major La Fresnaye, a good horseman and well mounted, whom I ordered to keep constantly within reach of your Majesty for the purpose of bringing me your orders in case you had any to give me, when I was informed by an aide-de-camp from General Excelmans that he had a Prussian rear-guard in his front which had taken position to the right of one of the roads leading from Sart-à-Walhain to Wavre, the point toward which all the enemy's troops appeared to be directed. I mounted my horse to attack them, when General Gérard, stopping me, *attempted to persuade me to move in the direction of the cannonading.* I made known to him in a few words the reasons preventing me from following his advice; *but he did not the less insist upon being allowed to march in the direction of the firing with the 4th Corps, if I did not desire to do so with the whole of my troops.* I did not believe it my duty under these circumstances, any more than on any other occasion, Sire, to assume the responsibility of modifying your orders."

There are certain qualities which, more than all others, develop at the same time both obedience and discipline.

Military Spirit and Martial Spirit.—In the first rank of these qualities should be placed the military spirit. France has not always excelled in the military spirit, but rather, indeed, in the martial spirit. There is a difference between these two qualities which it is important to grasp.

"The latter," says General Blondel, "makes nations warlike; the former makes armies powerful by order and discipline. One is a native virtue, the other an acquired quality; one is in the blood, the other a matter of habit. Alone, the one can gain brilliant successes, but their results may be compromised or annihilated by the most trifling event. By itself, the other can give transient *éclat* to peoples without natural vigor; but this power dies with the great men who created it. To attain and preserve the first rank among nations, both are necessary—the martial spirit and the military spirit, a warlike people and a great leader."

With us, will alone is wanting to regain these two qualities. One of them is the birth-right of our race; the other is acquired in the school of adversity. If kept alive in our army, and developed, they will again shine with renewed splendor.

When we consider these things, must we not wish that the recollection of our reverses, the imprint of which is borne by our new laws, may, in time, transform our national character, arrest the contagion of selfishness and worldliness; make character virile, firm in duty, prepared for sacrifices; restore honor to her true place, not upon the shrine of splendor and wealth, but in the conscience and in the heart; and, while our young men are passing through the army for instruction, teach them to esteem those who wear the uniform as the worthiest and the most deserving of honor.

The moral qualities which distinguish a good corps of officers are not the only sources of their influence.

Aside from these qualities, there are things resulting from them which more particularly strike the soldier, and which stimulate him to becoming deeds. The variousordinary acts of the military life are summed up in a single one: *the performance of duties.*

As a principle, the army being the nation's strength,

patriotism enjoins that all things should be sought for which increase its power, and all those shunned which tend to enfeeble it. This is a primary rule of conduct.

Duties towards Superiors.—Now in order that an army may be strong, it is not sufficient that all the officers and soldiers be brave and well equipped. There must still be cohesion, unity, and constancy in their efforts.

These advantages can spring only from a single will, making all arms and hands act to a common end, and from a single mind directing all faculties toward the same result.

Discipline and Subordination.—"Discipline and subordination are the thongs of the fasces; by these the horde becomes a unit, a quickened body, a colossus capable of the most gigantic efforts.

"There can then be only a single independent will in an army: that of the general-in-chief. The others, without exceptien, obey, from the general officer to the chief of squad, and their commands are but a consequence of of their obedience."*

Execution ot Orders.—But this obedience should be intelligent. It is not the obedience of a machine ; it is that of an enlightened will, which, while it does not discuss the order given, yet seeks to execute it in the most intelligent way.

It is impossible, in making out orders, to foresee and provide for all situations that may arise; and therefore in high commands these orders should be liberal enough, notwithstanding their precision, to allow each officer the latitude of action appropriate to his position. The one who executes has thus to exercise a choice of means.

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*General Blondel.

"Even a corporal of the outposts or a distant sentry may give proof of willingness and capacity. . . . This is still truer of an officer. . . . He ought, then, to use the faculty of thinking—to find and to place in operation the best means of attaining the end prescribed by his chief.*

The Initiative.—We see, then, that the dogma of passive obedience ought never to stifle the initiative, especially in high grades. Also that the order of the superior should not curtail it unduly, to-day especially, when the circumstances under which the order is given may have completely changed before it reaches the officer charged with its execution. To properly exercise the initiative in carrying out orders is not always easy, however. Circumstances are liable to arise in the field when the requirements of this double principle place the officer in the most critical situations.

Hesitation in the Execution of an Order.—At Königgrätz, the 2d and 4th Austrian Corps had received orders to place themselves between the Bistritz and the Elbe, thus to form the right wing.

Drawn into a violent encounter with the 7th Prussian Division, which defended the wood of Maslowed (Swiepwald) with great stubbornness, these two corps insensibly changed the direction of their front, and wasted most of their forces in this unprofitable struggle.

When the general-in-chief, Benedek, was informed of the appearance of the II. Prussian Army upon his right flank and rear, he gave these two corps orders to return to their first position between Chlum and the Elbe, at the very moment when their success against the 7th Division was assured.

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* General Blondel.

It was necessary then to renounce their advantage. These victorious and severely-tried troops were obliged to retire, executing a flank march under fire of the Prussian columns arriving from the north.

One of the corps commanders hesitated, and hastened to the commander-in-chief to remonstrate. But the order was adhered to.

These were the columns in retreat whose flank and rear the Prussians of the II. Army saw upon reaching the field of battle towards noon. The latter redoubled their ardor and audacity, and, aided by a withering fire, had no difficulty in throwing these two corps back in disorder beyond the centre of the main forces. After the defeat, nothing was said to the commanders of the 2d and 4th Corps; their movement had been fatal, but they had obeyed.

To sum up: "*Obedience in all its length and breadth, devotion in all its height, characterize the ideal military spirit;*

"And all soldierly virtues are embraced in these two: *discipline* and *courage.*"

Duties towards Equals and Inferiors.—After all, obedience to the orders of a superior is perhaps, for officers, the easiest of their functions. Their duties toward equals and inferiors are of a more delicate character. "We fulfill them in uniting ourselves to the former by affection; to the latter by command and kindly protection."

It is by following this principle that the corps of officers prepares and sustains union in armies.

"For the officer, the affection of his comrades is the compensation for sacrifices . . . It is the safeguard against jealous rivalries and intemperate ambitions. It has its source in the generous recollections of youth or in the first dangers of his adventurous life. At the outset of a career so peculiarly honorable, it is indeed rare

that he does not feel all the sentiments inspired by honor. With a heart still warm with family affection, he sees in his equals only friends, in his leaders models whom he delights to follow and whose superior qualities he willingly acknowledges.

"In this first freshness of zeal, discipline is the better understood.

"Nowhere is fraternity more necessary than in a career where one is always liable in the morning to have need of the assistance rendered the night before to another;—assistance with money, advice, or sword. He should then see in his equals, brothers whose attachment is founded on esteem; in the corps to which he belongs, a family replacing his own; in inferiors, companions in arms whose judgments will not be on this account the less favorable, gratitude the less lively, nor assistance the less effective."*

The bonds thus established give incalculable strength to armies.

Mode of Exercising Command.—In order that a corps of officers may have great influence upon an army, it is necessary, then, that the command be skilfully exercised. The duties imposed by this office require special qualities.

"The commander must not only cover the acts of his inferiors with his name and his authority, but he must require these subordinates to yield submission to his orders,—an obedience not only unmurmuring, but even ardent. He must know how to make them submit without wounding them, to govern without degrading them, to keep down resistance without provoking revolt."

Now those things which control without offering

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* General Blondel.

offense are real superiority, moral qualities, knowledge, and the faculty of inspiring respect and affection.

Since our defeats we have looked in all directions for the best means of strengthening discipline in the army. Often we have thought to find it in excessive rigor, and at other times in undue lenity.

These were extreme methods: "In reality, the art of easily governing men is to act upon them through their impulses. In France the dominant passions are love of glory and honor. Among our soldiers there is not one who does not respond to this powerful and sublime voice—the voice of honor. Honor! admirable pivot for great actions; soul of the military life; exalted pride, leading men to lives without fear and without reproach. It gives desire for reputation, disdain of pomps and vanities, abomination of shameful means, love of duty, the passion stimulating the soldier to merit all the good that is thought of him. It is more powerful still and more noble than the love of glory, for it is deeper seated and less interested." *

It is then by resting himself upon these high sentiments that the commander can succeed in obtaining from his troops the most perfect obedience and the most substantial discipline.

He will be sure then of the excellence of his army.

Condition of the French Army in Point of Morale.—Our army—let us make no mistake in the matter—is not in this respect in condition to admit of easy comparison with other European armies. Many shocks have disturbed it during the last century, and to properly estimate its elements of strength we must forget neither its past character nor its history.

"A hundred years ago the army regenerated France. It was in its ranks that the passion for glory and liberty

* General Blondel.

electrified so many hearts, sustained so many efforts, produced so many prodigies. It was there that after many sacrifices, mistakes, and reverses, we saw our inexperienced young soldiers, without shoes, without bread, almost without arms, but animated by this passion and disciplined at the cannon's mouth, conquer and drive from the sacred soil of France the trained generals and veteran troops which united Europe brought against us.

"This fever was abating when, by the genius of a great captain, it was rekindled. The master of victory had appeared."*

He gave to our army immortal glories which no recollection, even the most cruel, can efface. He raised its material and its moral power to a height which no other army has ever known. Under his ascendency, devotion, enthusiasm, and the other military virtues reached their highest altitudes; victory became a habit; glory had never before such brilliancy.

So much renown bewildered us, and, in our blindness, we did not see the enemy growing upon our frontier; did not understand the jealousies, the nameless hatreds which we had provoked, nor the ambitions which watched us in silence.

To-day, however, our eyes are open. But yet we know that, if we have been vanquished, our honor is still without stain; if defeat forced us once to lower our colors, it has not made us forget the glory of our former successes. The great names, Rivoli, Marengo, Jena, Austerlitz, graven in characters of fire upon our history, will always shine with the same splendor on the standards of our regiments. The military qualities which have given us these victories are the same as formerly. Moreover, we know to-day the faults which brought

*General Blondel.

about our misfortunes, and we are not blind to the animosities which threaten us. We know that labor and determination have already given back to us our strength; that our army has entered, in its turn, upon a new career, and that it has constantly for its guide two sacred words whose prestige is immortal, the words *honor* and *country*.

The principles which have just been held up to view have shown us upon what foundations the organization of the command in armies should rest. But beyond these rules, which have a considerable influence upon the moral force of armies, upon their cohesion and their strength, there are others of a material character which are not less indispensable to assure success.

It is important, first of all, to be acquainted with those which concern the distribution of the masses to be set in motion.

§ 7. FORMATION OF ARMIES.

When we seek the rules governing the formation of armies, the *first* question which presents itself to the mind is that relating to the *number of men to be assembled* under the same leader; the second, to their *most advantageous division;* and the third, to the *proportion of accessories* to be joined to the combatant forces.

We shall consider each of these subjects in detail.

I.—The Effective Strength of Armies.

History teaches us that very large armies can be commanded only by men of genius; that it is prudent, in questions of organization, to count in general only upon moderate capacities, and that consequently it is necessary, in the apportionment of the forces of a country, not to allow the strength of any single army to pass beyond from 120,000 to 150,000 combatants.

Human powers have a limit, and this limit will not ordinarily permit the grouping of larger forces in a single hand.

Moreover, an army of ordinary size has always more cohesion and better facilities for the transmission of orders, permits greater promptness in the execution of these orders and greater rapidity of movement, than a larger army.

Theoretically, then, a mass of troops formed into several armies of average size, has more powerful means of action and better chances of success than if arranged into a less number of larger units.

We must then conclude, with General Lewal, that there exist conditions of numbers and organization which correspond to a maximum of effectiveness.* These conditions may be determined by practical data.

Thus, as a rule, an army may not without danger exceed a certain fixed combat front;

It must preserve a march front which will allow it to concentrate in seasonable time;

It should occupy *a space of territory* sufficient to supply the troops with food for at least twenty-four hours.

Each of these considerations leads to almost identical results.

Combat Fronts.—Let us first consider the combat front.

One of the factors determining its extent is the distance which can be embraced by the eye aided by a good field-glass, or from 8 to 9 kilometres (from 5 to 5½ miles).

The commander-in-chief being supposed in the centre of the field in an open country, the combat front would reach from 16 to 18 kilometres. Now experience proves that this space is too extended, that we must regard

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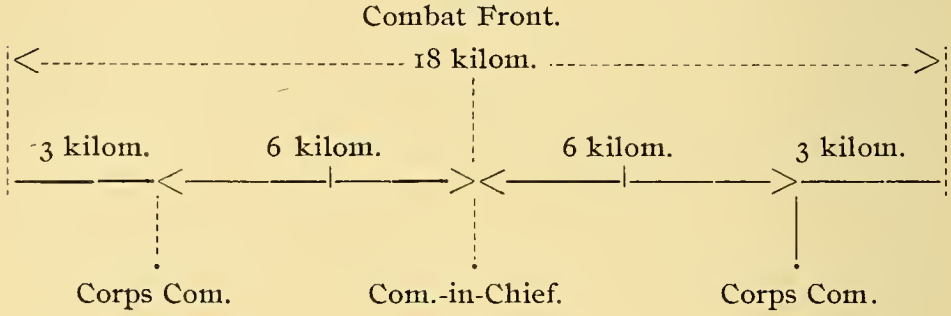
*General Lewal, *Partie Organique*.

it as a maximum, and that it may not be exceeded without exposure to disorders and miscalculations.*

An army's combat front should, moreover, be such that an interchange of communications between the general-in-chief and a corps commander would not require, going and coming, more than an hour and a half at the most—an interval corresponding to 12 kilometres.



Thus the most distant corps commanders should not station themselves farther than 6 kilometres from the general-in chief.

Supposing the former to be in the centre of their troops, we see that the combat front could be extended two or three kilometres beyond their stations. In this manner we again reach a maximum front of from 16 to 18 kilometres.

Now if we suppose a corps of 30,000 men in order of battle upon three lines, and a maximum of 5½ men per running metre, the proportion dictated by experience with arms of rapid fire, we reach a front of from 5,400 to 6,000 metres for this body.

From this it is seen that upon a front of from 16 to 18 kilometres we cannot employ more than three corps of 30,000 combatants, or 90,000 men.

To these should be added the general reserves, whose importance is well understood. It is with these that

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*General Lewal, *Partie Organique.*

battles are gained and defeats tempered. The requirements of deep orders of battle, the destructive effects of modern arms, the obligation to advance in action by successive efforts, and finally, experience, have prescribed that the proportion of reserves shall be two-fifths of the engaged troops; or, for 3 corps in line, 2 corps disposable in rear. Consequently, for a front of from 16 to 18 kilometres, the army would contain 5 corps of 30,000 men each, or 150,000 combatants.*

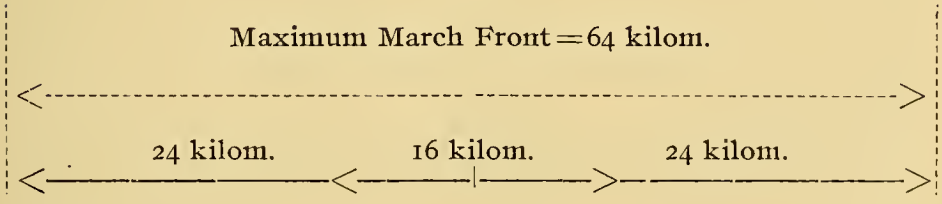
March Fronts.—The estimate of the extent of the *march front* leads to the same conclusions.

An army in motion should always be able to concentrate within a single day.

Now, this condition will be fulfilled if the length of march front be so regulated that, in order to take its place in line, an army corps has never to make a march exceeding 12 hours, or 24 kilometres (15 miles). The baggage and other impedimenta are in this case left in rear.

Let us take a combat front of 16 kilometres, and suppose the troops assembled there. Each corps, in moving from its position toward the point marking the extreme limit of the march front, will, as we have seen, be able to travel a distance of 24 kilometres, and we shall thus have as the extreme limit of the march front, 24 kilometres $\times$ 2 + 16 = 64 kilometres (40 miles).

FIG. 1.



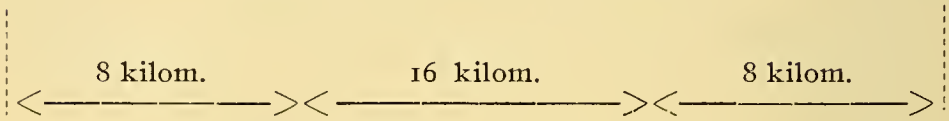
On the other hand, in order that a corps may move

*General Lewal, *Partie Organique.*

upon any point whatever of the combat front without overstepping this distance of 24 kilometres, the march front should be reduced to a minimum of 32 kilometres (20 miles).

FIG. 2.

Minimum *March Front* = 32 kilo.



The mean between these two extremes is 48 kilom., or, in round numbers, 50 kilometres.*

History teaches us that the commanders of large armies acknowledge the correctness of these figures.

Moreover, it is an established fact that, in order to assure the subsistence of an army for 24 hours, in the countries of Europe in a fair condition of cultivation, there must be one kilometre of front to every 3,000 or 3,500 men. For a front of 50 kilometres, this proportion corresponds, we see, to an army of 150,000 men.

The average of disposable communications will, of course, have a controlling influence upon the maximum number of troops that can be set in motion.

In Europe, a front of 50 kilometres will contain scarcely more than three roads approximately parallel. It has been demonstrated, moreover, that 30,000 is the maximum number of troops that can be moved upon a single road and preserve the power of concentrating upon the head of column in a single day, or that two groups of 30,000 men each constitute the largest force that can be moved in one column and possess the power of making a central concentration in the same time.

The maximum number of troops therefore that under these conditions may be moved over 3 roads is 180,000. But in practice, concentrations usually taking place to

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*General Lewal, *Partie Organique.*

the front, each corps of the first line requires at least one road, the reserve corps only remaining in rear. This leads us back to the army of 150,000 men in 5 corps, 2 of which march in rear.

The March Front of Napoleon.—Napoleon preferred a very strong central column and two light lateral columns flanking the first.

In 1805, in his march toward the Traun, he placed 100,000 men upon the same road. To-day, we have more baggage, more munitions, more artillery, and more accessories, and it would be dangerous to imitate this example.

On the whole, then, reason accords with experience in designating 150,000 men as the mean strength of armies.*

But there is no doubt that force of circumstances will often lead to an increase in this number.

Strength of Modern Armies.—Contemporaneous history offers us numerous examples of the strength of armies. Upon this subject it is well to remark that in France the practice has been, since the wars of the First Empire, to give as the strength of the army the aggregate of those drawing rations. The result is that we possess erroneous ideas concerning the real strength of the fighting force.

Indeed, for the general, there is but one useful figure, that of the combatants.

Thus the Prussians, leaving to their commissaries the duty of estimating the number of consumers, count only the guns, sabres, and cannon.

Napoleon in his bulletins gave only the strength of the combatants.

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*General Lewal, *Partie Organique.*

The Army of 1809.—In this year, the Army of Germany with its ten corps, its corps of observation on the Elbe, its cavalry reserve, and its parks, contained on 1st January, present under arms and consequently combatants, 234,750 men.

Grand Army of 1812.—On June 15, 1812, the number of those present under arms with the army proper, upon the lines of communication, on the coasts, in fortifications and depots, in Germany, and on the march to rejoin their commands, reached the formidable number of 574,506 men and 152,463 horses.

Counting all drawing rations, this army was swelled to 625,646 men. The number of troops actually taking part in operations during these two campaigns of 1809 and 1812 was however much less.

Notwithstanding, we see how much Napoleon must have relied upon his genius to move such masses without other intermediaries than his corps commanders.

Army of the Crimea.—On the 5th September, 1855, our Crimean army comprised a force, officers included, of 120,321 men, 27,249 of whom were not disposable for action. The number of combatants then did not exceed 93,000.

Federal Armies in the War of Secession.—During the War of Secession, the armies of the North were inferior in size to the preceding.

Sherman's army in 1864 was about 100,000 strong; the year following, the Army of the Potomac numbered 107,777 men.

Prussian Armies in 1866.—At the end of June, 1866, the Prussian forces reached 326,600 combatants, divided into three armies and four detached corps.* But soon

* Prussian General Staff.

the three armies directed against Austria were formed into two, namely :

The first (Army of the Elbe and I. Army) 139,300 combatants;

The second (Army of Silesia) 115,000 combatants.

German Armies in 1870.—At the end of July, 1870, the II. German Army had 198,000 combatants. Some days later it was increased by a new corps, and reached 228,000 men, divided into 7 army corps and 2 divisions of cavalry.

The I. Army, which served as right wing to the preceding in the first operations, numbered, counting from the 6th of August, 96,000 combatants.

At the same time, the III. Army was 167,000 strong.

The aggregate of forces assembled to invade France reached, by August 6th, in combatants alone, 461,000 men.

This figure is a minimum; it was soon augmented by the arrival of new masses, which were already *en route* at the beginning of August.

At this time, the Germans had on foot, including garrison and depot troops, 1,183,389 men.

German Armies in a New War with France.—In a new war with France, it is probable that Germany will place in the field 4 armies, each comprising 5 corps and 2 divisions of cavalry; that is to say, 4 armies of from 150,000 to 160,000 combatants each.

We see from what precedes that, as a rule, modern nations will henceforth be obliged, with the formidable effectives which they mobilize, to divide their troops into several armies, and to adopt for each of them a mean strength of about 150,000 men.

But we must admit that the exigencies of war will

constantly create unexpected situations, which may require a modification of these estimates.

After having determined the number of effectives, it remains to seek the most advantageous grouping of the masses to be put in motion.

II.—Army Subdivisions.

Troops are grouped into brigades, divisions, corps and armies. At the moment war breaks out, their division depends, in most cases, upon the ground on which they are to act, upon their effective strength, and the part they are to fill.

In countries furrowed with canals and ditches, troops can march only upon the roads and in separate groups. The management of large units presents serious difficulties, and the use of small ones becomes therefore a necessity. This is the case in Upper Italy, for example.

Thus, in 1866, when the Austrians took the field against the Italians, the Archduke Albert kept his troops in separate brigades, each brigade being provided with all necessary accessory services.

This arrangement was also adopted for operations against Prussia in the upper basin of the Elbe. The army corps were formed with four brigades each, without divisional designation. But here the ground was quite different; the experiment was not favorable, and, since then, this army has resumed the divisional formation.

Division of Small Armies.—The manner of dividing armies depends likewise upon their effectives. Generally, the utility of giving them a principal body, two wings and a reserve, has been recognized. Now this rule could not apply to small armies if it were found desirable to divide them into corps. It is evident, indeed, that an army of from 50,000 to 70,000 men formed

into two or three corps could have two wings, a centre, and a reserve, only by divesting such corps of their real importance. It will be preferable then to arrange an army of this size into 4 or 5 divisions, and to neglect the corps partition.

This combination presents another advantage. The authority of the commander-in-chief is more easily exercised over commanders of comparatively weak units, than upon two chiefs, each of whom directs half the forces.

When Marshal Marmont took command of the Army of Portugal in 1812, he found it about 50,000 strong, divided into three corps. He hastened to modify this organization, declaring that if it was an indispensable arrangement for moving large armies, it was fatal for those of smaller size. "It places," said he, "too much distance between the general-in-chief and the troops, retards the execution of general orders by the superfluity of grades and stations which it establishes, and it moreover occasions waste in the matter of supplies."

Division of Large Armies—The rule admitted for the division of small armies will not, however, apply to bodies of from 150,000 to 200,000 men. In such masses if the largest units were divisions of 10,000 men, for example, the number of orders to be dispatched by the general staff, taking into account the divisions of independent cavalry, the commanders of special arms, parks, administrative and accessory services, troops of the second line, etc., would probably be from 20 to 25.

To accomplish this, cumbersome headquarters and a very large *personnel* would be necessary; the general-in-chief would be incessantly overwhelmed by the greatest variety of details; and, finally, the office work would be so overcharged that a large portion of the orders could not be dispatched in time. The machine could no

longer do its work. It is important in such a case to create intermediaries between the divisions and the chief command; hence the partition into army corps.

The adoption of this unit has the advantage of sensibly diminishing the work, the mental strain, and even the responsibility of the general-in-chief; and the stronger the large units are made, the more apparent will be this relief.

On the other hand, if it is desired to possess the power of forming a centre, two wings, and a reserve, it will be necessary to divide large armies into four or five corps.

Napoleon maintained that armies should not contain more than five large units. We thus find that the proper division of an army of 150,000 men is into 5 corps of 30,000 each.

The opinion of the leaders of the Prussian army upon the division of large armies is in accord with the above principles. General Bronsart von Schellendorf expresses himself thus upon this question:

"In consequence of the adoption of compulsory service, the effective forces of armies have sensibly increased. This will scarcely permit us to conclude that we may properly diminish the effectives of the first subdivision of an army. To be sure, in case of an army of from 60,000 to 80,000 men, it must appear more logical to form 4 divisions of infantry and 1 of cavalry, than to adopt the normal partition into two corps with a division of cavalry.

"The two corps would together form 4 divisions of infantry, and in this particular case, the corps commanders would be useless, even mischievous, intermediaries.

"But in an army composed, in time of peace, of 18 corps, which would, in time of war, constitute 4 or 5 armies, each of these armies would have a force at least double that supposed in the last case, and if the plan

we are considering were adopted, it would require these armies to be separated into 10 divisions each, which would make the command and general direction of affairs most difficult.

"Experience has demonstrated, moreover, that the great difficulties presented in making dispositions for an army's daily march, arise not on account of the troops themselves, but entirely from those things designated by the terms columns, trains, baggage, etc. If the commander-in-chief of an army, after having regulated the plan of march of 8 divisions, must still take measures varying essentially, according to the case, relative to the places to be occupied by the various trains in the columns of march, he will impose upon himself a task beyond the limits of human capacity.

"It is at this time, especially, that the necessity for application of the principle of division of labor makes itself felt. It will be principally with reference to marches, to those features of military operations which are presented almost daily during the course of a campaign, that we shall recognize the advantages arising from adopting the corps as the first division of an army. This will be the more readily seen upon considering that the corps, accompanied by its indispensable trains only, has a length of from 25 to 30 kilometres, and that in the ordinary case of a march upon a single road, it occupies by itself alone a space equal to a good day's march. The disposition for the march upon a single road will, consequently, be more judiciously made by the immediate commander of this body of troops. It will be sufficient, then, to consider the importance of properly drawing up the orders of march, to become convinced of the necessity for the creation of army corps.

"The conclusion is moreover the same upon viewing the matter in the light of the interior wants of the bodies of which an army is composed. If in order to

reduce the convoy as much as possible, it is sought to transport the smallest practicable quantity of munitions, clothing, subsistence and hospital stores, etc., we shall not be slow in discerning that this result will be the more easily reached by adopting for a war footing an organization based upon grand tactical units possessing large effectives.

"There is an almost perfect equality between the aggregate wants of similar parts of an army; but these vary more and more according as we descend the scale of subdivisions. There is then, even in this regard, an advantage in making use of the corps system in preference to the separation into divisions possessing only half the number of troops. It is beyond doubt, indeed, that from the day when the division becomes the first partition unit of the army, it will be indispensable to give it munition columns and a complete train. Therefore, in case this formation should supplant the corps system, the commander would no longer be able to regulate the matter of supplies in such a manner as to provide completely at all times for the needs of the divisions, unless it should be a question of an army only three or four divisions strong—that is to say, in an entirely exceptional case, and one which it is unnecessary to take into account when the subject of organization is under consideration.

Grouping of Armies.—We have still to examine whether armies should act separately in operating toward a common end, or whether it would be preferable, in order the better to combine their efforts, to subject them to a common will.

The principle of unity in command has already answered this question. But there are considerations more potent still. With the prospect of future conflicts in view, and the conditions fully understood by which na-

tional security can alone be maintained, the grouping of armies will henceforth become a kind of law from which it will be dangerous to depart.

The same reasons which have led to the union of smaller units under the same command, those which have brought about the grouping first of divisions and afterwards of corps, to form armies, enjoin that on account of increase in the effectives, a combination of a higher order be adopted,—*a group of armies*, constituting an *ensemble* of forces acting upon the same theatre of war and obedient to a single chief, a generalissimo, charged with directing their operations.

Grouping of Forces under Napoleon.—History shows, however, that great warriors, confident in their genius, or perhaps doubting the capacities of their lieutenants, have always preferred to command a single large army rather than several smaller ones.

This was one of the causes of the difficulties which arose under Napoleon when his armies reached their highest effective. The year 1812 marked the beginning of this period, which also signalled the commencement of his decline in power.

Combined Armies of the Coalition.—In 1813, the Allies, for various reasons, gave preference to the system of combined armies. They had, at this time, three armies: one of 120,000 men in Bohemia, one of 100,000 in Silesia, and one of 70,000 in the North, near Magdeburg. They were to operate in concert, and it was agreed that the one attacked by Napoleon was to retard his march, while the other two operated against his flanks and rear.

This was a true combination of armies. Napoleon, constrained to act in the same way, was under the necessity of weakening himself at all points at the same

time. It was thus that he placed 65,000 men under Oudinot near Wittenberg and Torgau; 100,000 men under Ney, upon the Bober; 96,000 divided into four army corps to watch the defiles of Bohemia; and 72,000 in reserve near Bautzen.

He had thus 333,000 men arranged in four combined masses. But this arrangement, which he, however, claimed was only provisional, had a capital defect. Under his powerful hand, the leaders of his different armies did not feel themselves generals-in-chief; they had neither the prestige, the authority, nor the initiative characterizing the latter. They were the commanders of large army corps, and nothing more. This organization did not prove suitable in practice, and in consequence the operations suffered.*

Federal Armies During the War of Secession.—During this war the Federals avoided the use of large armies, preferring the system of combining armies of moderate size, which offered to them the advantage of relieving the commanders-in-chief of many perplexing details, and also of diminishing the importance of the powers confided to each.

The Germans, in 1870, acted in the same way, although they had large armies and eminent generals. They employed, as in 1866, the system of grouping armies under the orders of a generalissimo. The latter was, moreover, upon the very theatre of operations, and, in most cases, upon the fields where decisive actions were fought.

In France, Marshal Niel foresaw the wants of our army in this regard before 1870, notwithstanding a certain general carelessness for the future, an excessive centralization, and a blindness which led us to consider vic-

* General Lewal, *Partie Organique*, p. 51.

tory as a foregone conclusion, and which prevented us from understanding the strength of the organizations of our neighbors.

Grouping of the French Armies in 1868.—A short time after the agitation growing out of the Luxemburg question, and in anticipation of a struggle with Germany, Marshal Niel caused a plan of army organization to be prepared at the war office. This work, remaining secret for some time, was afterwards printed. It grouped our forces into three armies and three reserve corps.

The first army, 120,000 strong, divided into three corps, was to be concentrated at Metz; the second, 121,000 strong, also composed of three corps, was to be assembled in Alsace; the third, only 87,000 strong, in two corps, was to be posted at Châlons.

Finally, three reserve corps: one, of 26,000 men, at Belfort; one, of 40,000, at Paris; and one, of 32,000, constituting the Guard, completed this *ensemble*, which the sovereign was to command in capacity of generalissimo.

There was thus to be an organized mass of 435,000 men operating in combined armies. Unfortunately, upon the breaking out of war, our troops were not thus distributed. Adopted in time, and carried out with skill, this plan would, perhaps, have changed the result of the first engagements.

Grouping in 1870.—Instead of adopting it, Napoleon III. preferred to arrange his forces in a single grand mass, divided into eight unequal bodies, with strong general reserves, incapable of being moved with facility. The first operations on the frontier, at the end of July, 1870, made the inconveniences of this system very apparent. It became necessary, then, to return to the idea of the three groups, and, on 5th August, upon the eve of the

first defeats, the generalissimo decided that two groups, of three army corps each, should be formed in the first line, one upon the Sarre, under command of Marshal Bazaine, the other in Alsace, under Marshal MacMahon, —the order adding, for *operations only*. In every other respect, the corps comprising these groups received orders direct from general headquarters, under the immediate control of which, moreover, was held a third group composed of the Guard, the 6th Corps and the general reserves.

This defective combination had hardly an opportunity of beginning its trial. The repulses of the 6th August quickly changed the situation, and on the 13th of the same month, again on the eve of battle, the command received a new organization.

"After the fall of the Second Empire, the proper method of dividing large masses was no better understood. Many efforts were made, but with little or no concert of action, and hence without result; and much energy, vigor, and even heroism were displayed which came to naught. It was in vain that General Chanzy protested against the lack of solidarity among the forces. Several of his dispatches give proof of this.

"He wrote to the ministry, December 30, 1870: 'Our greatest chance of success lies in combining our movements, in the co-operation of the three armies (of the Loire, the North, and the East) to the same end, in the same effort, made at the same moment.'

"This last and supreme appeal of good sense was not listened to. The imagination, as is always the case in our country, took the place of judgment. An army had been sacrificed at Sedan to a simple illusion; another in the Jura to a chimerical hope of a diversion; while the Second Army of the Loire was allowed to be crushed at a time when it had become the very foundation-stone of our resistance."*

* General Lewal, *Partie Organique*, p. 54.

Necessity for Separating Masses of Troops into Army Groups.—These facts clearly show that the supreme directing power will only be the gainer by disposing the masses into combined armies. But other considerations, also drawn from actual war, favor this system.

In the field, the management of troops draws in its train many details. In consequence, the more their number increases, the greater call is there to divide the work which this increase develops.

Now, in proportion as a man rises in the military hierarchy, the more serious become his responsibilities. The character of high command is such as to oblige its depositaries to think, to reflect, to foresee, and to combine, infinitely more than in the lower grades. The importance of the questions with which they have to deal increases continually. It is a matter of great moment, then, that the number of these questions should diminish, and that these commanders should be more and more relieved from the consideration of details.

Hence arises the necessity of a continual decentralization of the military power and the formation of groups of combined armies, thus preserving the generalissimo from the annoyance of having to attend to secondary matters. His action is then confined to the general direction of affairs, and he is able to devote himself entirely to combinations of the whole and to conceptions of a high order.

Application of the Principle of Combining Armies.—The combining of armies is then one of the obligations of modern war. The application of the principle will depend upon circumstances and needs created by the general situation.

Thus the rule prescribing that armies shall possess a a principal body, wings, and a reserve, is likewise true for groups of armies. Those then in the same theatre

of operations should be disposed into three active armies, one of them a reserve, or better still, into four armies, one of them constituting the reserve.

Their lines of communication should then be covered by territorial troops, or troops of the second line, leaving entire independence to the active forces. Moreover, the investment or defense of the large intrenched camps which to-day have been substituted for the fortified places of former times in the protection of frontier zones, requires the free disposition of new armies upon the flanks or rear of the operating forces.

The consequence will thus be to set in motion masses of the largest proportions. Supposing a principal army of 150,000 combatants, two lateral armies of 120,000 each, and a reserve of 110,000, we reach half a million men in line, or nearly the number which Germany threw upon our country in 1870.

Protection of the Communications.—To guard the communications of these masses will require scarcely less than one-third of their number, or 166,000 men, established upon the railroads.

Finally, upon the offensive it is probable that the front of operations of the three armies will, at the outset, come into collision with at least two intrenched camps of the first order, which will menace the lines of operations from the flanks. These must be invested or masked. Each of them will, no doubt, arrest an army of at least 130,000 men.

Army Groups of First and Second Line.—We shall thus have in motion a mass of more than 900,000 men, divided into two groups of armies, one forming the first, the other the second line.

Grouping of Armies in a Future War between France and Germany.—In another war between France and Germany

these forces will perhaps be exceeded. The study of the organization of the German armies reveals, indeed, that preparations are making for 21 army corps of the first line, with a probable division into a group of 4 armies, each composed of 5 or 6 corps and 2 divisions of cavalry.

Including all those drawing rations, the normal strength of the corps will reach 37,000 men, and the Guard 40,000. Here is then a first mass of 703,000 men, ready again to inundate our eastern provinces. Behind these will come 924,000 trained soldiers charged with occupying large military places, investing our intrenched camps, or guarding railroads and other lines of supply.

It is then no longer a question of two or three armies, but indeed of two or three groups of armies, which would act together in such a case in a vast *ensemble* of operations upon the same theatre of war.

The principle of grouping combined armies appears, then, in the operations of the future, quite as logical as that of the unity of command.

Hence there is no doubt that these groups will require a generalissimo exercising command upon the very theatre of war itself. Whichever of the two adversaries fulfills this condition, will have an incontestable advantage over the one directing the movements from a distance.

Army Groups in the War of Secession.—In the United States, during the War of Secession, the Federal Government did not hesitate to conform to this rule, taught by experience. Thus the commanders of the groups acting in the West were subjected to the authority of the commander-in-chief of the federal forces.

We must admit, therefore, that the principle of grouping combined armies is suited to the conditions of warfare between two great powers at the present day; but it

is also very evident that this principle is not absolute under all conditions.

In practice, exceptions will spring up, made necessary by circumstances—the configuration of the ground, the number of effectives, and even the end to be attained.

Combination of Movements in 1870.—In this year, the three German armies which invaded France met, at the outset, many obstacles in the way of combining their movements, due to the topographical features of the country, and the unforeseen circumstances attending their initial operations. At first, upon leaving their zone of concentration in the Palatinate, these armies were forced to separate into two groups, which, on account of the Vosges, were obliged, for some time, to pursue divergent directions.

At this period, their junction remained somewhat uncertain. After the 6th of August, the events of the war themselves exercised a new influence upon the whole of their operations. The III. Army, forming the left wing, had the good fortune, after its first victory, to find the ground clear, and the road to Paris open. The I. and II. Armies, on the contrary, had still the Army of Metz upon their lines of operations, and freedom of movement was not assured them even as far as the Moselle. The combination for marching was affected by this also, the progress of the invasion retarded, and the pursuit of our 1st and 5th Corps rendered less active.

These facts are not the only ones exercising an influence upon the combined movements of armies. Circumstances the most diverse may have the same effect. They have, sometimes, great weight in fixing the essential features of armies, and in creating unavoidable exceptions in the application of principles.

Grouping of the Prussian Armies in 1870.—Eighteen days

after the declaration of war, Germany had three armies in the field against us. The First Army, composed of 3 army corps and 2 divisions of cavalry, contained 115,000 *rationnaires* (96,000 of whom were combatants), 10,000 horses, and 270 guns. Its duty was to form, in the first strategic marches, the right wing of the group of armies which was to advance between the Rhine and the Moselle. It was complete and in position upon the Sarre on the 6th of August.

The Second Army was to form the centre, and, at the same time, the principal body of the group.

But instead of limiting it to a normal effective of from 150,000 to 160,000 combatants, the Chief of General Staff, Field-Marshal Von Moltke, believed that on account of the circumstances of the case it should be much larger.

He estimated the French forces concentrated upon the Moselle at about 240,000 or 250,000 men.

Moreover, he knew that the Vosges would for some days separate his group of armies into two masses; that the right force formed of the I. and II. Armies was exposed nôt only to assault from the forces assembled around Metz, but also to an attack upon its left flank by the troops that we had left in Alsace. These views, conformable to the tactical principle that detached bodies fall back upon their supports, were firmly rooted in the minds of the Prussian generals until the day after Frœschwiller [Woerth]. They were partly the cause of the failure on the part of the cavalry of the III. Army to keep up the contact on the 7th of August, and contributed to the safety of the debris of our 1st Corps. It resulted from these considerations, that in order to be certain of always having the numerical superiority, the central army of the group required great strength.

There was also another reason.

The intrenched camp at Metz lay upon the line of

operations of the I. and II. Armies. It was important then to provide for the case of driving the French army within the walls of this place, and consequently for the necessity of investing it.

The II. Army came thus to be formed into six corps, two of which, the Guard and the Saxon Corps, had a very high effective. These six corps were soon raised to seven by the addition of the II. Corps, which joined it, however, only upon the battle-field of Saint-Privat. Finally, two divisions of independent cavalry were added to this mass. The Germans, desirous of concealing the number of their forces, have attributed to this army an effective of only 180,000 combatants.

This is indeed the number which they obtained by counting only the bayonets and sabres. But the artillery troops, the pioneers, and many other *rationnaires* who were also combatants, raised the effective, from the 6th to the 18th of August, to 230,000 men, 22,200 horses, and 546 pieces of artillery.

On 18th August, not taking into consideration the losses sustained, there were with this army, including the II. Corps, 266,000 *rationnaires.*

In fact, Von Moltke could thus oppose nine army corps and four divisions of cavalry to the five French army corps which he knew had assembled on the Sarre and Moselle. This was the moving cause of his combinations. Consequently he did not hesitate to intrust to a single general-in-chief a formidable mass, very much larger than the mean effective of 150,000 men.

But there were other reasons, aside from those growing out of these strategical considerations. There exists in the Prussian army such a decentralization of the command and the initiative, that the generals, even without the experience acquired in the campaigns of 1864 and 1866, were qualified to direct the most unforeseen movements on their own authority. The practice of

receiving only general instructions in their orders, and of deciding all details of execution themselves, singularly facilitated the exercise of the supreme command.

The duties of this office were thus very much simplified; and in an army whose officers, in the different grades of the hierarchy, unhesitatingly come to a determination at the opportune moment, it is certain that the ordinary limitations to the exercise of the command may be very much exceeded. A striking proof of this simplification is found in the fact that this army of 266,000 *rationnaires*, almost as strong in itself as the entire Army of the Rhine, employed in transmitting the orders of the general-in-chief only six staff officers and six assistant staff officers acting under the orders of a major-general.

As to the Third Army, it was to form a wing, was to act separately at the beginning, and was perhaps designed to protect South Germany; moreover, in advancing into the interior of France it was exposed to attack, particularly upon its left flank; and, finally, it was to occupy the most important line of communications of the army group, that from Strasburg to Paris. For all these reasons it required considerable strength. In consequence it was given five army corps, two special divisions of infantry—one of Würtembergers, the other of Badensers—and two divisions of cavalry, or a total of 195,000 combatants, 20,000 horses, and 576 guns. Considering all its *rationnaires*, its numbers mounted up to 220,000 men. From this example it is seen that in mobilizing the large effectives of to-day, governments should not neglect to have the greatest possible number of combatants upon the theatre of action. And when this theatre is limited by accidents of the soil or insuperable obstacles, so that it will not permit the combined march of more than three armies, it is frequently found advisable to exceed in their composition the mean figures fixed by experience.

Formation of the French Army in 1870.—It would be instructive to compare the defective formation of our army in 1870 with the grouping of the German armies; but this study would require too great a development. It will suffice to recall that our effective national forces at that time were estimated at 1,100,000. Unfortunately, this was an illusion. From this number should, first of all, be subtracted 500,000 *gardes mobiles*, who had not served a single day with the colors. Besides these, allowance should be made for a large number of non-effectives. Nevertheless, France actually placed on a war footing, at the beginning of August, 553,223 drilled men.

Of this mass, it was unfortunately necessary to leave:

5,466 men for the occupation of Rome;
43,194 men to guard Algeria;
240,000 men in the interior of the country.

There remained:

252,760 campaign troops.

Such was the official effective of the Army of the Rhine on the 1st of August. But it included all the *rationnaires*. The number of combatants has never been really determined, but probably did not exceed 200,000 men.

In place of forming two armies, this mass, as we have seen, constituted but one, divided into corps of unequal size, which were scattered upon a broken line 200 kilometres (about 125 miles) in extent. Notwithstanding the courage of our troops, three of these corps were beaten separately, and nearly destroyed, by the first shock of the enemy's compact group. Such was the consequence of this defective organization.

To sum up, we must allow to armies a mean composition corresponding to the ordinary limits of the human faculties. But it cannot be doubted that, as a general

rule, their strength will vary according to their mission, the theatre of operations, and the qualities of the generals commanding them.

After having studied the principles adopted for the formation of armies, it remains to examine those which have served as guides in the organization of their constituent parts.

§ 8. COMPOSITION OF THE ARMY CORPS.

We have already seen that it is advantageous for an army to be divided into three, four, or five large elements, so that it may have, for marches and combats, two wings, a centre, and a reserve.

We have also seen that this division assures it the greatest degree of strength and mobility, at the same time that it facilitates the exercise of command. The constituent element thus formed is the *army corps*.

Its importance arises from the peculiar rôle assigned it. Whether forming the centre, one of the wings, or the reserve, it is called upon for individual action which is sometimes very considerable. It is evident that its mobility and strength, in a certain measure, guarantee those of the army itself; that, in consequence, its composition, its effective force, the means of action at its disposal, and its method of utilizing them, have a decisive influence upon the result of the operations.

In reality, the army corps is the *strategic unit* of grand armies. In order to permit it to fulfill the part devolving upon it, its formation should be such as to give it the greatest possible mobility, and to permit the greatest vigor of action.

That it may be prepared for the field in time of war with the greatest rapidity, and may possess the greatest cohesive strength, it should be in existence in time of peace. Thus the different parts will be already created,

will act with order and regularity, and be located upon the very same territory whence their war complements of men, horses, material and provisions of all kinds are to be drawn.

From this it follows that modern armies in time of peace should be divided into corps, and the country into corps regions, or into grand commands corresponding to this grand unit.

The numerical strength of army corps has for a long time been considered a variable element.

In France, Napoleon was the first to adopt the partition into army corps. Substituting numbered corps for the former groups,—wings and centre,—and leaving the Imperial Guard apart as a special corps, he reserved to himself the employment of these grand units according to the needs of the moment, instead of assigning them a permanent part in marches and battles.

Finally, varying the effective forces to correspond to the requirements of the war and his particular combinations, he gave very different compositions to his corps.

In 1806, the army which conquered at Jena comprised seven corps, and a reserve of cavalry. Their effectives were as follow:

1st Corps	Bernadotte	23,600 men.
3d "	Davout	33,000 "
4th "	Soult	41,000 "
5th "	Lannes	22,700 "
6th "	Ney	33,500 "
7th "	Augereau	19,300 "
8th "	Bessières	Imperial Guard.
	Murat	Cavalry Reserve.

This diversity was maintained during the entire period of the Empire; but even at this time, the mean strength of the corps approximated 30,000 men.

The Allies, although more disposed to adopt a normal corps effective, nevertheless varied it also.

In this regard, the Napoleonic tradition held sway even to the Second Empire.

In 1870, the seven corps of the Army of the Rhine presented, about 6th August, the following effectives, officers included:

Corps.	Divisions of Infantry.	Divisions of Cavalry.	Men.	Horses.	Guns.
Imperial Guard.	2	1	22,075	7,304	72
1st Corps.	4	1	41,660	8,137	120
2d "	3	1	29,128	5,616	90
3d "	4	1	43,278	9,810	120
4th "	3	1	28,910	5,536	90
5th "	3	1	27,417	5,527	90
6th "	4	1	38,756	6,286	66
7th "	3	1	24,185	5,396	78
General Reserves. Cavalry	3		6,001	5,536	36
General Reserves. Artillery, 16 Batteries			2,903	2,749	96
General Reserves. Engineers			236	58	
Grand Field Park			682	42	
Grand Engineer Park (not formed)					
Imperial Headquarters			1,767	1,610	
Grand Total			266,998	63,607	858

A hasty examination of this distribution will be sufficient to show that this army had little mobility, that the orders of its chief must be transmitted with slowness, often with difficulty, and that, for active operations, its organization was inferior to that of the German armies.

To-day, in almost all countries, the strength of the corps is determined by the following considerations:

The uninterrupted current of opinion among military men has been that 30,000 troops represent the largest force that can be marched upon a single road in a day, and preserve its proper power of assemblement.

With the Romans, this was the strength of a consular army.

Napoleon admitted as a doctrinal fact that more than this number could not be marched upon a single road in one day.

The Germans have expressed the same thing in another way by saying that a corps of 30,000 men is the largest force which, marching upon one road, can be deployed in a single day upon the head of the column. To accomplish this, it will be sufficient if the infantry march by fours, the cavalry by threes, and the pieces and caissons in single file. This arrangement is not arbitrary; it results from the dimensions of the roads. It prescribes that an army corps in column without trains shall have a mean length of 24 kilometres (about 15 miles), which corresponds to a day's march.

In summer, the length of the daily march may perhaps be extended to 30 kilometres (about 18½ miles), if the heat be not excessive. In winter, on the contrary, with but eight hours of clear day, it should be shortened.

It has been calculated that a corps of 40,000 men in column upon a single road, without ammunition or supply trains, ambulances, or bridge equipage, would occupy a length of 32 kilometres (about 20 miles); a corps of 50,000 men, 40 kilometres (about 25 miles). The trains require almost as much space as the corps itself; so that, upon a single road, the rear of the trains of an army corps of 40,000 men will be two days' march from the head.

Hence, when a corps exceeds 30,000 men, the march should be made upon two roads.

In France, it has been calculated that by allowing for an extension on the march of one-fourth for infantry, cavalry, and artillery, and of one-half for the convoys, the length of the combat column of an infantry division of 12,000 muskets will be 14 kilometres (between 8 and 9 miles). That of an army corps of 25,000 muskets,

under the same conditions, counting from the head of the advanced-guard to the rear of the main body, without the munition trains, has been fixed at 26 kilometres 700 metres (between 16 and 17 miles).

I.—Army Corps of the Principal Powers.

The effective strength of the German corps has been determined according to these principles, which have likewise served as a basis in establishing that of our own.

The German army corps is always estimated at a mean of 30,000 men ; but in reality upon a war footing we see from the most recent documents that it comprises the following elements :

German Army Corps.

	Officers.	Employés.	Men.	Horses.	Guns.	Wagons.
Headquarters	16	51	214	259	. . .	20
1st Division of Infantry. . .	335	171	14,290	2,115	24	214
2d Division of Infantry . .	362	182	15,528	2,174	24	230
Corps Artillery, with Hospital Service, Munition, Subsistence and Post columns, etc.	85	100	3,418	3,360	48	383
Trains and Ambulances. . .	30	146	2,251	2,709	. . .	684
Totals	828	650	35,701	10,617	96	1,531

Grand total, officers and employés included: 37,179 men.

In Austria and Russia the increase in effectives has also swelled the normal figures.

Russian Army Corps.

The Russian corps upon a war footing comprises:

Officers and others of Assimilated Rank.	Troops.	Horses.	Guns.	Wagons.
1,008	41,735	10,047	108	1,443

Total, officers included: 42,743 *rationnaires.*

Austrian Army Corps.

In Austria, the mobilized corps comprises a still larger effective; but this may be changed and perhaps reduced at the moment of taking the field.

It comprises at present:

Officers.	Employés and Civil Agents.	Men.	Horses.	Guns.	Wagons.
1,293	526	50,586	9,368	112	1,526

Of actual combatants there are, however, only 39,498 infantrymen, sappers, and pioneers: 1,815 cavalrymen, and 112 guns.*

*The figures relating to the Austrian Army Corps are taken from the Staff Guide. But everything leads us to believe that Austria would mobilize her army corps in two divisions and not in three. The corps effective would consequently be diminished.

Italian Army Corps.

In Italy the corps approaches the normal type, and comprises:

Officers.	Troops.		Horses.	Guns.	Wagons.
	Men.	Employés.			
967	27,583	20	3,868*	80	502

Or in all : 28,570 men.

II.—Corps Subdivisions.

The composition of the army corps is, like the number of its effectives, controlled by settled principles.

From the moment when it is to march separately upon a single road, it should be in condition to preserve its independence under all circumstances; and to this end should possess troops of the three arms of the service, technical troops, bridge material, an administrative service, and accessory services of all kinds. It is necessary even that the general who commands it should avoid having his hands bound by the auxiliary services which he has left in his corps region.

While seeking means to enable the corps to march in column upon a single road, we should not lose sight of the advisability of moving it upon two roads whenever practicable. From this arises the obligation of organizing it in two or three secondary units, strong enough to possess a proper independence in their turn. Thus the corps is formed with two or three divisions. But this number has often been exceeded. Corps have been

* Less the saddle horses of the officers.

known with three, four, and even five divisions. They had then little mobility, and in the field often found themselves out of condition to observe the tactical rule which prescribes that the parts of an army designed to act in common be held together, and that their efforts be combined to a common end.

To-day, we still hesitate between the corps of two and that of three divisions. But the weightiest reasons make in favor of the two-division system.

An army corps of 30,000 men, in two divisions, upon a single road, will occupy, in fact, with its regimental trains, according to German data,* a length of 28 kilometres (17 miles)—extension being as little as possible—that is to say, the rear of the column will be able to start only when the head has marched 28 kilometres. At the rate of 4 kilometres (about 2½ miles) per hour, this column will require 7 hours in defiling. In the most favorable season of the year, in summer, with thirteen hours of clear daylight, from the moment when the rear is put in march, there will be but six hours at its disposal in which to reach the corps bivouac. This will be insufficient, and these troops will arrive only after night-fall. Properly, the corps should not cover more than from 20 to 24 kilometres in a day; that is to say, it should march only from 5 to 6 hours in the mean.

But if it is composed of three divisions, its different parts, moving upon a single road, can be assembled in the same day only upon the condition of reducing the daily march of the corps to two or three hours, periods corresponding to eight and twelve kilometres; for the more numerous the units, the more extended becomes the column.

There is only one remedy for this state of things, which is to utilize two roads in the march of such a corps.

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* *Manual for the Conduct of Troops*, by Captain von Widderu.

But the advantage of a concentrated formation is then lost.

It will be more expedient, therefore, to partition the corps into two divisions instead of three. It follows, moreover, as a result of our discussion, that 24 kilometres (about 15 miles) is the longest march that can ordinarily be made by a corps in a single day.

But the reasons presented are not the only ones favorable to the division into two parts.

It has been found a difficult matter, especially when the armies are numerous, to give to a corps a larger force than from 30,000 to 35,000 men.

Moreover, experience has taught that it is advantageous to form the division into two brigades, the brigade into two regiments, the regiment into three battalions.

Under these circumstances, it is the separation of the corps into two divisions, which allows us to have the highest effective force for each of these units.

In 1870, we had corps of 28,000 men in 3 divisions; others of 40,000 men in 4 divisions. The latter had then an effective of only from 9,000 to 10,000 men each; the brigades numbered only from 4,000 to 5,000; the regiments from 2,000 to 2,500; and the battalions from 600 to 800. All these units were thus weaker than the corresponding elements of the German army. To this numerical inferiority our defeats in isolated actions were often chiefly due, especially in the first days of the war.

Notwithstanding the advantages of the distribution of the corps into 2 divisions, the proposition has for some time been under consideration in Germany of giving it 3 divisions, for the purpose, it is said, of being able to make a greater number of combinations.

Upon this subject, Major Meckel, Professor of Tactics at the Military Academy at Berlin, says: "Two divisions can only be employed side by side, or one behind the other, thus necessitating the dismemberment of one

and sometimes both, when it is desired to constitute a reserve or to occupy points of secondary importance." But the German author here looks at but one side of the question, and a debatable side. It is certain that the adoption of the three-division system cannot take place without deeply changing the Prussian military organization in respect to recruitment, territorial distribution, and mobilization.

The adoption of it is then doubtful.

But it is not the less interesting to see arising in the minds of our neighbors the idea of placing a new infantry division at the disposal of the corps commander in time of war. Major Meckel has attempted to justify it by the following reasons:

"At the outbreak of war, it would be advantageous," says he, "to confide to the commander of the corps, in addition to its organic elements, several groups of batteries and a reserve of infantry." The reserve divisions of the landwehr would allow this to be done without difficulty, and would assure to the German army corps an effective of from 45,000 to 50,000 men.

A buttress is furnished the partisans of the three-division system by the words of Clausewitz: "*Nothing is more awkward in an army divided into three corps than to see each of these separated into two divisions, for, by such an organization, the authority of the corps commander is nearly neutralized.*"

However, it is certain that, to-day, in Germany, France, Italy, and in other countries, the partition of the corps into two divisions is intimately connected with the peace organization of the army, and the system could not be disturbed without destroying this organization. Therefore, while this continues, it will be necessary to hold to the present composition.

Composition of Foreign Army Corps.—In Austria, all the

corps except one (the 14th) are in 3 divisions. In Russia, the system is mixed. Of 19 *corps d'armée mobiles*, 11 have 2 divisions.

In Spain and Belgium, the two-division system is also in vogue. In England, the three-division system prevails, but the composition is no longer the same as on the Continent.

III.—Composition of Infantry Divisions.

In the composition of infantry divisions, we must take into account the case when circumstances will involve them in isolated action. This situation presents itself not only when a division is separated from its corps, but may also arise in the case of one making part of a general line of battle. The corps commander can, indeed, in this situation, deploy his two divisions one beside the other, and assign to each a distinct field of action.

From the moment when the divisions are liable to be called upon to operate separately, it is necessary to organize them as small corps, and to assure them a proper independence. Hence, there must enter into their composition the three arms, infantry, cavalry and artillery, with an engineer detachment and divisional ambulance and administrative services; and, in special cases, they must even be provided with bridge equipage.

This organization, moreover, permits each division to march upon a separate road, when occasion requires.

In the latter part of the war of 1870, when the German troops were obliged to extend over wide distances, in order to contend with the enemy's numerous but untempered levies, which it was not expected would give sustained battles, their leaders felt the necessity of forming the divisions into brigades with all arms of the service. This partition was demanded by the peculiar situation of the adversary. These brigades performed the

services which in ordinary times fall upon divisions or corps.

In 1871, when the South German army, under orders of General Manteuffel, marched across the Côte-d'Or, to cut our Army of the East from its communications, and throw it upon Switzerland, the Kettler Brigade was sent before Dijon to cover the right flank, and to resist the enterprises of Garibaldi.

On account of this special mission, artillery and cavalry were joined to it. Its strength was 6 battalions, 2 squadrons, and 12 guns.

But this was an organization made necessary by circumstances. It should be adopted only in exceptional cases, and for particular reasons.

The division, as a rule, is composed of 2 brigades, numbering 12 battalions altogether; a group of artillery of 4 batteries; a regiment of cavalry of 4 squadrons; a company of engineers with bridge equipage; and a hospital detachment.

Among these various elements there is one, the regiment of cavalry, whose utility is still debated. It has been observed on this subject that if the division is separated from the army, the 4 squadrons are insufficient, and that in the contrary case the number is too large.

There are always large masses of cavalry on outpost duty in advance of these squadrons covering the front of the army. If the two divisions march one behind the other, upon the same road, there is no longer a place in column for the regiment of cavalry of the 2d division. If it is interpolated into the grand column of march, it is stripped of its usefulness; often it must be sent in advance of the 1st division or upon the flanks, and in this case it has no function except to link this division with the neighboring divisions, which is unnecessary. While awaiting a solution of the question, large armies have generally maintained the regiment of divisional cavalry.

In France it has been otherwise. We have united the two regiments of cavalry to form a brigade, which is held at the disposal of the corps commander.

IV.—Corps Artillery.

In Germany, the corps contains three constituent parts: 2 infantry divisions and the corps artillery of from 6 to 8 batteries (36 to 48 pieces).

Our neighbors hold that this artillery should generally act as a unit. It was thus that they often employed it in 1870, imparting to its action a deadly power, which was greatly augmented by the concentric direction of the fire. Its effect was always severely felt: it had a destructive action upon our artillery, which it quickly silenced, and a demoralizing influence upon our infantry through the loss of its artillery support.

"A line of guns as long as that furnished by the artillery of a corps," says Von der Goltz, "has an immediate influence. Wherever it appears and wherever its blows prepare the attack, the infantry involuntarily rushes forward."

The front taken by it ordinarily indicates the line of battle of the entire corps. Should it be distributed between the divisions, as has been several times proposed, there would be taken from the corps commander his most effective means of giving a direction to the combat, and of obtaining superiority at the decisive point. This commander should then have the sole right of disposing of his corps artillery.

While observing this principle, in Germany a considerable part is left to the spirit of initiative born of the occasion, and it has sometimes resulted from this that the corps artillery has been placed in line at the order of the artillery officer in immediate command of this arm, or even by some other inferior authority.

Thus at Woerth, August 6th, 1870, the artillery of the Fifth Prussian Corps was massed at eight o'clock in the morning, at the commencement of the battle, upon the order of the general commanding one of the divisions, with the concurrence of the corps chief-of-staff. The corps commander had only to pass upon the measure after its execution.

According to the ideas held by our neighbors, the army corps, in order to fulfill its function, should comprise, as we have said before, three combatant parts; namely, two divisions and the corps artillery; the remaining parts are designed to provide for the probable wants of the corps. Thus munition columns should have sufficient ammunition for an entire day's conflict on the part of all the forces. The troops carrying with them one day's supply, it follows that a two days' battle will not entirely exhaust the ammunition. Such is the rule on this subject.

The provision columns and the parks should be able to sustain men and horses for five full days. The five provision convoys of the German army corps carry four days' supply for all the troops, and the five forage convoys a seven days' allowance for the animals. These convoys form a single service in the field, and by means of them a minimum supply is provided for more than five days, or more exactly, six days.

The ambulance service should be able to care for 2,400 wounded, the mean number of losses in a single day's battle for a corps of 30,000 combatants, or 8 per cent.

A bake-house equipment should be provided in order to be able, in a cultivated region and with the aid of private industry, to furnish each day's bread.

The divisional bridge equipage should permit the crossing of streams from 37 to 45 metres wide.

And, finally, the horse depot, well supplied with for-

age, should leave its territory at the commencement of a campaign with 200 horses.

Normal Type of the German Army Corps.—Examined more in detail, this organization creates for the German army corps a kind of type, the peculiarities of which are:

Combat troops: 2 divisions and corps artillery.

Each division has 12 battalions of infantry formed into 2 brigades of 2 regiments (each regiment thus having 3 battalions); 1 regiment of cavalry of 4 squadrons; and a group of artillery of 4 batteries.*

The corps artillery is composed of 8 batteries (48 pieces).

The battalions have 1,000 men, the squadrons 150 horses, the batteries 6 guns.

The troops carry with them supplies as follow:

Food: each soldier for three days, the horses for one day.

Ammunition: 110 rounds per man for infantry, 50 for cavalry, 135 per gun for artillery.

These supplies, as well as the ambulance material, are carried by the men and horses or in the battalion wagons.

Each battalion of infantry has one six-horse, one four-horse, and seven two-horse wagons.

Each squadron has a two-horse wagon.

Each battery, in addition to its pieces, has twelve six-horse wagons.

Each infantry division has an engineer company, with the bridge material necessary for a 35-metre bridge, and three tool wagons.

A third company of engineers is joined to the army corps, with equipage sufficient to construct a bridge 125 metres long.

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*A battalion of chasseurs is in addition attached to the 2d infantry division.

The corps possesses, in addition to the munitions carried by the troops, about 200 six-horse wagons, with 60 extra rounds per man for the infantry and about 140 rounds per field-piece. The food supply of the corps is assured for about a week through the provisions carried by the troops and those transported by 160 four-horse and 400 two-horse wagons. Respecting the care of sick and wounded, aside from the surgeons attached to the troops, medical attention is assured by three infirmary detachments of 100 men each, and twelve field hospitals. These detachments, with their twelve two-horse wagons, are charged with the duty of assisting the corps surgeons in giving first aid to the wounded upon the battle-field, and in removing them to the hospitals. The twelve field hospitals are each equipped in *personnel* and *matériel* for the reception of 200 sick or wounded, or in all, 2,400. The *matériel* of each hospital is carried in six wagons.

Finally, the army corps has a *personnel* and *matériel* sufficient for the establishment of a telegraphic line of 20 kilometres, as well as for the maintenance of communication between the field stations and the interior of the country. The whole is so organized as to enable the divisions to operate separately.

The normal army corps prepared for the field is thus composed of:

25 battalions or 25,000 infantry;

8 squadrons or 1,200 cavalry;

16 batteries or about 2,000 artillerymen with 96 guns.*

But as we have seen, the total force is raised to more than 37,000 men and 10,000 horses.

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* Blume, *Strategy*, Berlin, 1882.

§ 9.—CAVALRY DIVISIONS.

I.—Bodies of Reserve Cavalry.

In 1870, we still held, in France, to the old organization of cavalry reserves dating from the First Empire. At that period the action of cavalry through its momentum was often decisive; great masses of horsemen were consequently necessary; and yet Napoleon more than once regretted these formations.

Ordinarily, he joined to his armies strong cavalry reserves, which were usually under command of Murat. He set them in motion as compact bodies, giving his orders thus: "To-morrow the cavalry reserve will assemble at such an hour. It will move to such a place." The result was that regiments were obliged to wait whole hours before beginning the march, thus prematurely exhausting their horses. Moreover, there was great difficulty in feeding these masses when united. It was to these different causes that must be attributed in part the ruin of the cavalry of the Grand Army, the commencement of which dates from 1812.

Without taking into account the changes which improvements in fire-arms made necessary in cavalry service, and consequently in the organization of this branch, the French army, until 1870, remained faithful to these traditions.

The Army of the Rhine contained, indeed, general reserves of cavalry, artillery, and engineers.

Cavalry Reserves in 1870.—The cavalry reserve comprised three divisions, one of which, placed, August 6, at the disposal of MacMahon, was nearly disorganized at the battle of Frœschwiller. The others were joined to the Army of Metz, but continued with it only until the battle of Borny.

On August 14, one of these, still imperfectly formed, was detached to protect the departure of the Emperor.

These reserve divisions comprised at the outset:

The first: 2 brigades of light cavalry of 2 regiments each, and 2 batteries.

The second: 2 brigades of heavy cavalry of 2 regiments each, and 2 batteries.

The third: 2 brigades likewise of 2 regiments each,— one of them cavalry of the line, the other heavy cavalry,— and 2 batteries.

We see that in the composition of these reserves, the shock idea seemed still to predominate.

Independent of these reserves, there was one division of cavalry for each army corps. The composition of these divisions lent itself best to reconnoitering duty and to the service of covering the movements of the other forces. But with us, at this time, but little use was made of the cavalry in this sense. Thus the army never received proper information, and on the 16th August, German batteries were in position for cannonading the headquarters of a French cavalry division, before a suspicion of their presence was aroused.

The cavalry divisions attached to army corps composed of 4 divisions, comprised 3 brigades with from 2 to 3 regiments each, without artillery, one of the brigades of light cavalry, one of cavalry of the line, and the third either of heavy or line cavalry.

Those attached to army corps of 3 divisions, consisted only of 2 brigades of 2 regiments each, one of them of light cavalry and one of line cavalry.

They had the means of making reconnaissances, but lacked artillery; and if their surveillance duties were ill performed, the fault lay more in the lack of tactical instruction than with the organization itself.

Prussian Cavalry Divisions in 1866.—In this year the cav-

alry of the Prussians was apportioned without uniformity. This, however, did not prevent their being generally well informed.

Independent of its divisional cavalry regiments, the I. Army had a cavalry corps of 2 divisions, the first of which comprised 2 brigades,—one of heavy cavalry in 2 regiments, the other of light cavalry in 3 regiments, with 2 horse batteries; the second division contained 2 brigades of light cavalry,—each composed of 2 regiments,—and 2 batteries.

Prussian Cavalry Divisions in 1870.—In this year, fixed rules for the strength and composition of these grand units did not yet exist among the Germans.

The following shows the composition of their independent cavalry divisions:

3 of 3	brigades,	each of	2	regiments,	with	2	batteries.
2 of 3	"	"	3	"		2	"
1 of 2	"	"	3	"		2	"
1 of 2	"	"	2	"		2	"
1 of 1	"	"	3	"		2	"
1 of 1	"	"	2	"		2	"

The partition into 3 brigades of 2 regiments was already the most in favor.

Since 1870, this question has been much discussed, but it is still unsettled. Yet the principles which will eventually lead to its solution are very nearly established.

II.—Independent Cavalry Divisions.

If progress in armament has deeply modified the function of cavalry, it has nevertheless far from diminished its importance. It is true, this arm can no longer decide the success of a battle as formerly, nor even in a combat destroy the cohesion of troops; but it has a surveillance rôle which the increase in the range of arms

has extended very much beyond former limits. From another point of view, the large armies now put in motion, require for their security such a well developed reconnaissance service, that it has become essential both to increase the cavalry effective and to require greater speed in the horses.

It has then been necessary to give it, both as regards numbers and equipment, the means of acting with vigor, for the purpose of allowing it to watch at a distance to the front, during a period sufficiently long to permit the troops covered by it to concentrate for battle.

Its reconnoitering and covering duties have then been constantly increasing, and demand to-day an *ensemble* of acquirements and qualities more fully developed than formerly.

In principle, every unit destined to act individually ought to possess the means of obtaining information. Thence arises the necessity for both divisional and corps cavalry.

But this cavalry will not suffice to cover an army. For while the heads of the advanced-guard of corps and divisions are in condition to assure their main bodies against surprises, they can not without inconvenience be sent to distant points to form a zone of security in advance of the front, and upon the flanks of an army in march. There hence arises the necessity for special cavalry units, qualified to discover the strength, position, and designs of the enemy, in time to permit the main forces to assemble. Hence a double obligation devolves upon the cavalry of an army:

1st. To be strong enough to penetrate to the vicinity of the enemy;

2d. To keep far enough in advance of the army proper to give the latter sufficient time for concentration.

We have seen that a corps of ordinary size on the

march requires a day to deploy and take position for action. If each corps has a road at its disposal, the army will be given this length of time to come into line of battle.

This will regulate the minimum distance to which the covering cavalry should be pushed. It will necessarily exercise then a certain initiative. This has led to a return to independent divisions of cavalry acting directly under the commander-in-chief.

It is evident that this independence can be assured only by special conditions of strength, and these conditions may be easily determined by the particular service which these units will have to perform.

But, up to the present time, this service has not been clearly defined; opinion is still divided, and all that can be done is to set forth the theories which seem to lend themselves best to actual practice.

Strength and Composition of Independent Cavalry Divisions.—When in action, the cavalry division ought to give a shock, sustain it, then render it decisive, and finally assure the results. There must therefore be three units; one for the attack, one to support it, and a third to finish the action.

Now, in order to produce a powerful shock, a regiment of four squadrons is too weak. Three regiments, on the contrary, constitute too large a force, and one not easily wielded. The force then designed for the attack should be a brigade of two regiments.

Moreover, it cannot be foreseen which of the three parts of a cavalry division will be charged with the shock, the supporting movements, the decisive effort, the pursuit, or the protection of the retreat.

The three parts must therefore be equal.

Hence the cavalry division should be composed of 3 brigades, each with 2 regiments of 4 squadrons.

Thence results also a combat formation in three lines, the rôle of each not being defined in advance, so that there may be more liberty of action, and the means of better profiting by favorable opportunities. But, in fact, the first line, the one nearest the enemy, will ordidarily be entrusted with the attack, and the second with manœuvring, while the third should generally be held in reserve.

In certain cases it would be more advantageous to manœuvre with the first line and to charge with the second, in order to deceive the enemy regarding the direction of the blow:

Let us pass now to the subject of reconnoitering duty.

It is to be noted that the considerations drawn therefrom lead to results similar to those just stated.

In order to become sufficiently extended in front and upon the flanks of an army, a division of cavalry must occupy at least two principal roads. It must also have at all times a reserve ready to act, according to circumstances, in either direction. And, finally, it is indispensable that it be able to so divide itself as to keep up its connection with the reserve, and thence with the army itself. Here again arises the necessity for a division into three large units, capable of comparative independence in reconnoitering.

Three brigades of two regiments each will answer this purpose.

Verdy du Vernois is even of the opinion that one of these brigades could be advantageously employed as reenforcement or reserve; and that in consequence a division should have one brigade of heavy and two brigades of light cavalry.

But this is not all. The independence of these large units would not be assured for reconnoitering duty without the aid of an artillery force. On the other hand, if permanently attached to these divisions, the services of this

artillery would be of diminished value in case of a general engagement. To be available here, it should not form an integral part of the cavalry division, but be detachable from it. Up to the present time, it has been judged sufficient to give a battery to each of the two brigades of cavalry acting in first line. But ideas on this subject have been modified little by little, and to-day, on account of the difficulty of foreseeing positively the rôle of the several brigades, the tendency is to give a battery to each. A normal division of cavalry should then have three batteries.

In France, an organization has been adopted in conformity with these principles, that is to say, one giving the divisions 3 brigades (each having 2 regiments), one of light, one of line, and the third of heavy cavalry. Moreover, the 2d regiment of each artillery brigade includes 3 horse batteries designed to accompany the cavalry divisions while on reconnoitering service.

Foreign Cavalry Divisions.—In Austria, the divisions of independent cavalry have 2 brigades, each with 2 regiments and 2 batteries.

In Russia, the same composition prevails. In Italy, the cavalry divisions have also the 2 brigade formation; but one brigade is allowed 2 regiments, the other 3, with 2 horse batteries, which are soon to be created.

The number of independent cavalry divisions to an army depends upon a country's resources in this arm of the service, the object which the army has in view, and the character of the theatre of operations in which it is to act.

§ 10. ORGANIZATION OF THE HEADQUARTERS.

Each grand unit, army corps or cavalry division, possesses auxiliary services to provide for all its needs. The general-in-chief finds himself thus freed from the consid-

eration of a multitude of details, which were formerly such a source of annoyance as to paralyze his thought and sometimes his movements.

He has now only *to direct the operations, command the grand units, and provide for the general wants.*

This task, however, is still too burdensome for a single man. He requires assistants. Together these constitute the staff.

The good organization of a staff has an influence upon the success of an army, which has not always been sufficiently appreciated. Defeat has often resulted from a want of foresight or proper reasoning upon this matter.

The Prussian army, in 1806, and the Army of the Rhine, in 1870, have furnished us examples in this regard, the recollection of which ought never to be effaced. Von der Goltz says upon this subject:

"In 1806, the organization of the general headquarters was such as to render a vigorous exercise of the command almost impossible. Clausewitz speaks ironically of a congress called to direct the army. The Duke of Brunswick was to exercise the supreme command, but at the same time he had, in addition, a special command intrusted to him.* Prince Hohenlohe, at the head of another army, occupied at the same time the position both of *subordinate and equal.* His reputation as a general was not far below the Duke's; in the army, in particular, some accorded to him the greater talents. For himself, he believed it for the general good

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* "Something similar, it is true, took place in 1757, when King Frederick was commander-in-chief of the four columns of the army which invaded Bohemia, while having under his direct and special orders the part of the forces which set out from Dresden. A Frederick might venture to do this, for he was certain that his authority would be recognized under all circumstances; but for Charles William of Brunswick the case was quite otherwise, especially with Hohenlohe under his orders, and he himself dependent upon the King."

that he should play an independent rôle, and exercise the greatest possible influence upon the conduct of operations. Massenbach, his adjutant-general, confirmed him in this opinion. Rüchel was in the same situation as Hohenlohe.

"For both, special armies had been formed to satisfy the pretensions they were supposed to entertain.

"Moreover, the King was with the Duke's forces, which formed the principal army. He had come, it is true, only to awaken ardor by his presence, and thereby impart vigor to the operations. But his influence was to extend farther; for the Duke was guided by the decisions of a council in whose deliberations the King took part. The latter was accompanied by Phull, the oldest staff officer in the army, who here acted as his chief-of-staff. He had with him also Field Marshal Mollendorf, to whom, on account of his age (eighty-two), it did not seem advisable to give an active command, while, at the same time, it was not desirable to lose the benefit of the counsel which his long experience would enable him to give. Zastrow, in whom Frederick William had for a long time full and entire confidence, was likewise called to headquarters. Colonel Kleist, aide-de-camp of the general, in charge of official reports, was, by virtue of his important position, also given a voice in the council. Kalkreuth, who commanded the reserve of the principal army, and was constantly near the King and the Duke, played a secondary rôle. Moreover, the diplomates took part in the deliberations and decisions. In these discussions, no one sided with the Duke except Scharnhorst, his chief of staff; but in rank the latter was inferior to Phull, and even to Massenbach. He was a new-comer, and had not the gift of making his real worth apparent at the outset. The party of the general-in-chief played then, necessarily, an insignificant rôle, even with reference to

the number of voices. The King's followers, therefore, assumed the principal part. Instead of commanding and leading, the Duke himself was led; and, according to Clausewitz, he was not very much displeased at this.

"Trained and capable officers, good minds, were not lacking at the council. Certain of them, notably Scharnhorst and Kleist, and even Phull, acquired great reputation later on. But the product resulting from the collective acts of this body amounted to less than nothing; trouble and irresolution were the only consequences.

"The evil lay in the fact that all the components of this directing agency being selected exclusively with reference to persons, all questions were decided upon purely personal considerations."

Clausewitz, who at the age of twenty-six served in this campaign as a captain, and aide-de-camp to Prince Augustus, saw very clearly all these inconveniences, notwithstanding his subordinate position. "No one has any idea of the difficulties which beset Scharnhorst in the discharge of his office," he writes on the 26th of September to Countess Marie Brühl. "This may perhaps be in a measure understood by considering that there are present with this army three generals-in-chief and two adjutants-general, when there should be but one general-in-chief and one chief of general staff. Never in my life have I met a man better fitted to overcome such difficulties than the one I have just named; but how much is the force of his talent diminished by these thousand obstacles which result from deference to social rank, by this incessant struggle with diverse opinions. I am convinced that if defeat overtake us, it will be due entirely to these miserable personal considerations; for in all other respects the moment is most fortunate for the King of Prussia."

In 1870, at the commencement of operations, the

composition of the general headquarters of the Army of the Rhine was nearly as defective. The controlling power, often vacillating or entirely without aim, was always in a state of perplexity in the midst of diverse opinions, which at times completely paralyzed its action.

Later, when the sovereign left the army and confided the command to Marshal Bazaine, the misunderstanding between the latter and his chief-of-staff was of itself sufficient to compromise the safety of the troops. Here is the judgment passed by the Germans upon this situation: "The trial at Trianon acquainted us with the lack of understanding between these two men. Before the war they were on excellent terms. But Jarras had been under-chief-of-staff to Leboeuf during the time that the Emperor was commander-in-chief; that is to say, from the commencement of the war until the 12th August, 1870. Bazaine, in consequence, considered him, when the Emperor left him as chief of general staff, a sort of inconvenient overseer, designed rather to control than to favor his action. Moreover, Jarras had not been made acquainted with the general drift of military affairs, which, from the outset, prevented him from being of much assistance to the marshal. This is why the latter kept the business of the command from him, assigned him a purely passive rôle, and considered him, upon the whole, as a secretary of very high rank. The consequences may easily be imagined. The relations between the two men were not clearly defined. Neither should have suffered this strained condition of affairs to continue, for, as results plainly showed, it contributed to the ruin of the army."

To-day, greater attention is paid to the organization of headquarters, because the changed conditions of war have increased to a great extent the duties and cares of the general-in-chief.

First of all, as we have already seen, a war between two great European powers can no longer take place

without combined armies, and in consequence, without a generalissimo, whose authority will be exercised upon much larger masses, and over more extended theatres of operations. The needs of these masses have augmented proportionately. And, finally, new technical services have been created calling for additional *personnel* and *matériel*, and special instruction.

More than ever, then, the organization of headquarters, calls for a choice of individual qualities and a proper grouping of directors of the different services, which will lighten the labors of the general-in-chief without diminishing either his authority or his initiative. From the harmony of this organization, from the regular working of these different efforts set in motion by a single will, nothing but good can ever result. The slightest disagreement will, on the contrary, extend to the most remote members of the hierarchy, and interfere with the success of the operations.

In principle, the supreme head should have *only to decide*. The responsibility for the execution, which rests upon him alone, is burdensome enough to engage all his attention. Consideration of details can serve only to distract his thoughts from important questions.

It is necessary, then, to entrust these details to others. Even the act of transmitting his will does not lie in his province. It should be left to an officer of high rank, who, on account of the character of his position, should possess the entire confidence of the commander. This is one of the duties of the chief of general staff.

The selection of an officer for this position, therefore, should be dictated by the friendship of the general-in-chief, and by the latter's intimate knowledge of his character and capacity.

For secret business, for relations of a confidential nature, he should have, in addition, a group of special officers, whose tact, personal devotion, and zeal are unlimited.

Hence aides-de-camp and special staff officers.

The rule accepted everywhere is to allow the military leaders to name these officers.

Direction of Operations.—Jomini thus expresses himself upon this subject:

"A good staff is indispensable to a properly constituted army; it must be considered as the nursery whence the commander-in-chief can draw needed material; as a body of officers whose intelligence should second his own. When there is a lack of harmony between the genius which commands and the talents which are to carry out its conceptions, success becomes doubtful, for the most skillful combinations are sure to be defeated by errors in execution. A good staff has, moreover, the advantage of being more lasting than the genius of a single man; it can remedy many evils, and we dare affirm that it is the best safeguard of an army. The small interests of a clique, narrow views, misplaced self-love, will range themselves against this assertion; it will, nevertheless, remain a truth without exception, acknowledged by all thoughtful military men and all enlightened statesmen.* A well constituted staff will be to an army what a skillful ministry is to a monarchy: it will second the chief, even when he may be in condition to

* "I do not consider that a good staff may be properly instituted by this alone, that unusual studies are required of the young aspirant: he may be a profound mathematician, a good topographer, a correct draughtsman, yet a poor warrior. A staff in order to fulfill all requirements should, in my opinion, have enough influence and authority, to hold out inducements to officers of other arms of the service; it would thus secure those already distinguished by aptitude for the profession of arms. Engineer and artillery officers would cease to antagonize such an institution, in reflecting that the staff would offer them a wider field in which to distinguish themselves, and would thenceforth be only an assembly of those officers of these two arms, who, having shown themselves the most capable of assisting in the directions of military operations, are placed at the disposal of the general-in-chief to aid him in his labors."

direct everything by himself; it will tend to bridle mistakes by furnishing him with reliable information; when he is unskillful, it will prevent them. How many mediocre men in ancient and modern times have been made illustrious by events begotten of circumstances which they were not wholly instrumental in fashioning!

"Regnier was the first medium of Pichegru's victories, and Dessoles, like him, was not a stranger to the glory of Moreau.* Is not General Toll associated with the successes of Kutusof; Diebitsch with those of Barclay and Witgenstein; Gneisenau and Müffling with those of Blücher? How many other names might be cited in support of these assertions!"

The present opinion of the leaders of the Prussian army upon the mission of the staff and its influence upon armies is not less worthy of attention.

Here is that of General Bronsart von Schellendorf, at the present time Minister of War at Berlin:

"The staff forms one of the essential parts in the organization of modern armies. The general placed at the head of a body of troops, no matter how small, would not be able, especially in time of war, to lose himself in questions of detail, the examination, the comparison, and reasonable solution of which are often nevertheless of great importance. Aside from the fact that the intellectual and physical powers of a single man would not suffice for this task, such an obligation would distract serious attention from the comprehensive glance which this officer should bestow at all times upon the troops placed under his orders. He must, then, have assistants, and it is these assistants that form the staff. It is difficult enough to give an exact general definition of the portion of this body which is designated under the name of general staff.

* "I do not intend to place Moreau in the rank of mediocre generals; I only affirm that he was so well seconded by his chiefs-of-staff as to owe to them a portion of his glory."

"In some armies, the general staff comprises the entire staff, the aides-de-camp and the officers placed at the head of the artillery, engineer, intendance,* auditorship, chaplaincy, and medical services. But everywhere it has been looked upon as necessary to employ in the elaboration of the operations, properly speaking, a part of the staff, designated generally by a special appellation. In Germany this forms an adjunct to the general staff.

"The importance of the staff augments with the increase in the effectives, with the constant and manifold developments in the military institutions of a country.

"When armies were small, when their movements, their manner of camping and giving battle, were determined, as it were, by rule, the need of having instructed and experienced staff officers was little felt. The orders emanating from the general-in-chief included the details of execution; and therefore with an invariable order of battle it was a simple matter to carry them into effect.

"This is not so to-day. The dimensions of the forces employed, as well as the manner of dividing and subdividing them, from which result innumerable modifications, give rise, even in circumstances appearing at first view exactly similar, to an infinite variety of minutiæ in the execution. In consequence of circumstances so varied, the army leaders should be constantly assisted by officers chosen and trained in a special manner.

"If the question is then regarded in another aspect, one having a more intimate relation still with the combat tactics of troops, namely, that respecting the dispositions and movements of the enemy; or is surveyed with reference to the conduct of the battle upon a point beyond the view of the commander, it will be seen that

*The Intendance Department is the general supply service. It corresponds very nearly to our Quartermaster, Commissary, and Pay Departments combined.—TR.

there is an absolute necessity for the employment of these aids.

"The chief of staff is the natural coadjutor of the general-in-chief in the exercise of his command. It is he who transmits the thoughts and orders of the latter. He has also to suggest all measures that appear to him for the good of the army. His initiative and the scope of his action are then considerable. He is in fact, after the commander, a kind of second director of operations. For the general-in-chief he is an *alter ego* so intimate as to receive his entire thought; of sufficient authority to express his own upon all occasions; high enough in rank to exercise, in case of need, an influence upon the command of the largest units, and to centre in himself the direction of the general services.

"'The harmony existing between the generalissimo and his chief-of-staff,' says Von der Goltz, 'will contribute in large measure to compensate for the lack of military genius in the former, to supply the place of the gifts which ought to distinguish one holding a positon of so much importance.'

"Their fruitful co-operation will depend, above all, upon the sympathy which one feels for the other.

"The services of the general-in-chief will be more or less valuable according as he is well or ill-disposed. It is the same with the staff. Its chief will give the tone. If this be good, if it breathe general and reciprocal good will, if all the members of the staff work in a spirit of good fellowship, the machinery of chief command will run with double precision and rapidity. Disunion and ill-will easily enter a group composed of such diverse elements when the chief is ill chosen; and everything is badly done, at a season when the utmost is expected of all. The sharp and brusque tone of command is then less necessary and useful here than elsewhere. The more engaging the manner, the more cordial the relations, the

better is the order obeyed. And a ray of this upper light is always reflected upon the army; the troops are influenced by the good or bad humor prevailing in high places: in no other respect is the influence of the chief-of-staff more strongly felt.

"From the double character of the duties devolving upon the incumbent of this office, it is evident that the person selected for it should have not only great talent, but also pleasing and affable manners, which exercise such a salutary influence upon all. There are men who have the faculty of drawing out subordinates in the most engaging way, to the full extent of their abilities. Such men possess one of the qualities most essential for properly discharging the duties of chief-of-staff.

"When armies do not exist in time of peace, their formation at the outbreak of war will of course be very hastily improvised. The staff officers and the aides-de-camp come from the extremities of the country. They often assemble without previous acquaintance, and the chief-of-staff has no knowledge of their individual worth. If the regulations assign each his position in advance according to rank, there results this advantage at the first moment, that the organization will be more quickly completed. But this benefit is unimportant; it presents this inconvenience, that chance alone would decide whether men were put in positions suited to their talents or training. If there are several days in which to disentangle matters, the members of the staff will become known, and it will be possible to assign to each the duty for which he is best qualified. Seniority and grade matter little; the essential thing is harmony."*

In France, in grand armies, it was the practice to give the title of major-general to the chief-of-staff. Ordinarily he was assisted by an adjutant-general, with the

* *The Nation in Arms*, by Von der Goltz.

rank of general of division. This was the *quartermaster-general* of the Germans. He was to relieve the chief-of-staff of a portion of his duties,—duties which in many cases were too burdensome for the strength of a single man. He usually had charge of the various bureaus, directed the members of the staff, and had authority in other important matters.

In 1870, there were at first two of these officers with the Army of the Rhine, bearing the titles of first and second adjutant-general. They were charged with the duty of preparing the orders relating to movements.

It is equally expedient that a group of officers, trained in advance for their special work, be charged with the labors relating to operations.

In this connection, the Prussians have adopted a division of work which is the logical and natural result of tradition and experience, and which is suited to the peace organization, as well as to service in the field.

To the staff officers alone belongs the duty of preparing for the various movements and operations, and, in consequence, of making out the orders relating to marches, supplies and combats.

Another class of officers, that of staff assistants, designated under the name *adjudantur*, is exclusively charged with the remaining staff duties.

These have to do with questions relating to *personnel*, promotions, awards, applications of all kinds, accounts, enrollments, new supplies of *matériel*, etc.

In the numerous wars undertaken by the Prussians, it was seen that most advantageous results were reached by dividing up the staff for special work. In the meanwhile, admittance to it was open to all officers. This body has become a real element of strength for their army, and has, in a large measure, contributed to their success, while gaining for itself a justly merited reputation.

In almost all armies, the rule has been adopted of distinguishing the various headquarters by special names. The Germans have:

Headquarters of the generalissimo, *Grosser Hauptquartier.*

Headquarters of the commander-in-chief of an army, *Ober Commando.*

Headquarters of the corps commander, *General Commando.*

Headquarters of the division commander, *Stabs-quartier.*

They are even careful to designate the assistant of the chief-of-staff by a particular title:

With a generalissimo he takes the title of *General Quartiermeister.*

With an army commander, he is called *Ober Quartiermeister.*

This *personnel* is completed by a chief of staff-bureau, who is especially charged with superintending the issuance of orders relating to operations and movements.

There is thus:

A general-in-chief who decides;

A chief-of-staff, who receives the decisions, suggests them in case of need, and directs their execution;

An under-chief, who shares the responsibility of the latter in details of the service;

And, finally, a chief-of-bureau, who sees to the proper drawing up and transmission of orders.

In France, the principles relative to the composition of headquarters have been summed up as follows by General Pierron:

"The rule to be observed in the composition of headquarters is that of strict economy in the number of the *personnel.*

"The headquarters of the commander-in-chief will include the chiefs of all the different services, or a repre-

sentative from each of them, charged not only with receiving, but especially with suggesting orders concerning their special branches; and in this regard they will, from time to time, refresh the memory of the general-in-chief, whose responsibilities and cares often lead to the concentration of all his faculties upon a single object.

"If it is important that the commander-in-chief have the chief of each service, or his deputy, at headquarters, it is necessary, on the other hand, to avoid encumbering these headquarters by what are called *central* administrative services, *central* reserves of artillery, engineers, etc. It is preferable to distribute these forces among the army corps; for experience shows that these central administrative services remain too far from the troops to assist them in time of need; and the central reserves of special arms of the service are in most cases tardy in reaching places where their presence may be urgently required, for on account of the length of their columns or their position behind all the troops, their march is delayed or they are forgotten.

"Among the chiefs of services which the headquarters should include, we may mention:

"The chief-of-staff, charged with making out the orders concerning operations.

"The under-chief-of-staff, chief of the bureaus.

"The chief-intendant, charged only with the establishment of magazines, and the distribution of their resources among the subordinate intendants; but who is in no case to supply the combatant troops directly.

"The chief-of-artillery, charged, not with careering upon the field of battle with one or several batteries, thus substituting himself for his subordinates, but with the duty of assuring the continuous supply of ammunition and its distribution to the army corps, and with directing the whole of the artillery in battles and sieges.

"The chief-of-engineers, whose function is, not to meddle with the details which have been entrusted to his inferior officers, but to mark out the grand features of investment works, draw up siege plans, etc.

"The inspector-general of stations and railroads, subordinate to the chief-of-staff, whose office is to determine the priority of shipments by rail of all kinds of supplies —food, ammunition, clothing, reinforcements, material, etc.—which are sent to the army; with protecting the lines of communications, regulating their service, and attending to the removal to the rear, of disabled men and unserviceable material.

"The director of the military telegraph service, who will dispose, under his immediate eye, a company of telegraphists in the first line, and another in reserve to connect the general headquarters with the subordinate headquarters.

"The military director of railroads, subordinate to the inspector-general of stations, but with authority to suggest to him orders concerning this branch of the service.

"The provost-marshal, who is to exercise disciplinary police over the sutlers and other camp-followers, and to prevent spying.

"The surgeon-general, whose office is to propose at headquarters, the adoption of general hygienic measures, to make suggestions to the inspector-general of stations and railroads regarding the removal of the sick and wounded to the rear, and to look after the general medical service of headquarters.

"The chief veterinary surgeon, whose business is to suggest at headquarters, measures for the proper care of saddle, draught, and pack animals; and to the beforementioned inspector-general, the establishment of infirmaries for horses in the rear; and, further, to direct the whole of the veterinary and farriery service, particularly at headquarters; to find out in time the necessary

measures to be taken for winter shoeing; and to prepare reserve supplies for the manufacture of horse-shoes and nails.

"The director-in-chief of postal service, charged with suggesting to the inspector-general the establishment of relays in the rear, and with directing the whole of the postal service, but more especially that at headquarters.

"The commandant of headquarters, having under his orders a guard—composed both of infantry and cavalry—permanently connected with headquarters, and to which will be attached, for the purpose of subsistence, orderlies, estafets, headquarter couriers, guides, etc.

"The representative of the international society of voluntary aid to the wounded, subordinate to the inspector-general.

"The agent of the war ministry, having charge of the rolls relating to promotion and the rolls for the legion of honor or the military medal.

"The paymaster-general, whose duty is to direct the use of the funds in a way to provide for exigencies of war service, and further to suggest at headquarters measures concerning contributions to be levied in the enemy's country, and those calculated to favor French commercial interests.

"These are the services represented in the highest military sphere."

To complete these directions, it is proper to add, as the dictate of experience, that useless persons should at all hazards be excluded from headquarters. If not, its mobility, its independence, its liberty of action, may perhaps be compromised.

Moreover, it is indispensable that the chiefs of the different services be not independent of one another, but that they constitute a hierarchy submissive to the authority of the chief-of-staff and his immediate assistant. If they all have the right of expressing their views

to the general-in-chief, and of suggesting orders, the latter will soon have a hundred different opinions. It would in this case be impossible for him to adopt suitable measures of the whole, and at the same time to work out all the details of execution.

On the contrary, if these opinions are submitted to the examination of a single and superior mind, the work of co-ordinating them will be performed in advance, and the general-in-chief will have only to decide.

In our time, new elements have been introduced into headquarters, which are often more dangerous than useful; these are foreign officers and reporters. The motive of the first is their personal instruction and the interest of their country; the second have no reason for being present, except their own private interest. The general-in-chief, who ought to think only of destroying the enemy, has nothing in common with them.

They will therefore be for him a source of embarrassment, often leading to the indiscreet disclosure of information. If he can get rid of them, he will find himself the better for it; if he cannot, the best thing will be to utilize them by communicating to them only those events which have already transpired, and which he desires to make public. In every case, it is the rule that all their correspondence should be submitted to the staff.

The introduction of inexperienced or volunteer officers into the headquarters has the same inconveniences. These have been frequently pointed out.

One of the most curious examples offered us, in this regard, by the war of 1870–71, is related by the staff captain, Von der Goltz, then attached to the staff of the II. Prussian Army:

"A most lucky discovery for the II. German Army was that of papers taken from an Irish adventurer, Captain Ogilvy, killed in the French ranks, November 24, 1870.

There was found upon him a note-book, embodying an account of daily marches, and a great deal of other information; also, the order given for the 24th of November, to General Crouzat's corps. This order assigned its three divisions to Beaune-la-Rolande, Juranville, and Saint-Loup. As the X. Prussian Corps had also been ordered to occupy these positions, the battle which then took place can easily be accounted for.

"Not only did the papers found upon Captain Ogilvy indicate the composition of the French corps, but they even enumerated its strength:

"1st Division	13,000	men.
"2d "	9,500	"
"3d "	8,000	"

"Finally, there was found in his pocket-book a letter furnishing a clear account of the views of the directing authority in the French armies, which was of great importance in guiding future operations. It was in the hand of the Dictator Gambetta himself, and was written for the purpose of introducing Captain Ogilvy to General Crouzat.

"It ran thus:

"FRENCH REPUBLIC.

"GOVERNMENT OF NATIONAL DEFENSE.

"The Member of the Government of National Defense, Minister of the Interior and of War;

"By virtue of the powers delegated to him by the Government, by decree dated 1st October, 1870;

"Accredits to General Crouzat, commanding the forces assembled at Gien, Captain Ogilvy of the Engineers, an *attaché* of the staff of the 18th Corps, but at present temporarily detached from it.

"Captain Ogilvy has my entire confidence. I con-

versed with him at length upon our military operations. Gien is evidently the key to our position upon the Loire. I know that it is safe in the hands of the valiant General Crouzat. I send Captain Ogilvy to assist him in his mission, and I beg him to give this officer a seat in the council, with a deliberative voice.

"Tours, November 19, 1870.

"LEON GAMBETTA."

"Certainly Ogilvy was not only to be an adviser, but was to act as confidential agent of the war commission, and to fill the office of inquisitor among the generals. That Dictator Gambetta, who wrote this letter with his own hand, should have adopted such a measure, proved to us (Germans) how much importance he attached to the success of the operations commenced upon the Loire above Orleans. The designation of Gien as the most important point of the Loire, when Orleans had played this rôle up to that time, seemed to indicate that the army making an offensive movement upon Paris was to be attacked by the right wing of the army of the Loire. It was clearly revealed that the advance march, so many times threatened, for the purpose of breaking the investment of Paris, would not take place by the Orleans route, but along the Loing, toward Fontainebleau. There were many advantages recommending this direction, and soon its selection became probable."

In concluding this *exposé* of the principles relative to the organization of armies, it would not be alien to the present situation to set forth those which concern the general services of administration, transport and correspondence. But the details requiring consideration in such an expansion of the subject would exceed the limits of a general work, and should rather find place in special treatises.

It is well, then, to end here this brief study of the organization of the military forces of the different states.

SECOND CHAPTER.

PREPARATION FOR WAR.

The strategic function of an army comprises two periods: first, a period of preparation for war, incident to time of peace, embracing *a study of the theatre of operations and of the resources of the enemy, and the preparation of the projet of operations;* then a period of execution, which follows the declaration of war, and during which operations are effected, according to the plan established, or at least in conformity with a general idea serving as a basis for the plans of the generalissimo, and which the more or less unforeseen events of war often modify.

It is then with this *ensemble* of labors designated under the name of *preparation for war*, that the study of strategy should begin.

Preparation for war includes first a study of the theatre of operations and of the resources of the enemy, then the drawing up of a *projet* of operations and a plan of transportation.

The regions through which the armies are to move offer natural or artificial obstacles that exercise an influence upon the operations. Therefore the strategic importance of these theatres often depends upon their topographical characteristics.

Thus there are two points of view from which the subject should be successively examined : one *topographic*, having for its aim the study of the inflections of the soil; the other *strategic*, designed to set forth their military importance. The task of making reconnaissance of a theatre of operations from this double point of view is one of the most important duties of the staff officers.

§ 1. TOPOGRAPHY OF THEATRES OF OPERATIONS.

Formerly the reconnaissance of a theatre of operations was made at the outbreak of war.

Napoleon took charge of it himself, and entrusted it only to his most eminent officers. Thus in 1805, through Murat, Savary, and Bertrand, he made reconnaissance of the roads and obstacles of the ground which would be met with in the basin of the Danube. The directions which he gave General Bertrand on this occasion are instructive.

"CAMP OF BOULOGNE, 7th Fructidor, Year XIII. (Aug. 25, 1805.)

"General Bertrand will proceed direct to Munich; he will stop at the house of M. Otto; he will present to the Elector the inclosed letter; after which he will proceed to Passau. He will examine the situation of this place; he will ascend the Inn to Kufstein; he will there make a regular reconnaissance: the situation of the various places, their distances apart, the nature of the roads, the width of the river, the amount of water, the dominant bank from point to point, the ferries, bridges, and fords. He will be accompanied by several Bavarian engineers; but he will take care to see for himself, and will write down whatever the engineers may be able to tell him of the character of the river, and of the events that have occurred there.

"He will then follow the Salza to Salzburg, whence he will return to Munich, passing the Inn at Wasserburg, and will also make note of this third reconnaissance. At Munich, he will gather from well-informed persons all possible information concerning the outlets of the Isar and other rivers running into Tyrol, as far as the outlet of the Lech.

"From Munich, he will proceed to Füssen, without leaving Bavarian territory. If Füssen be not occupied by the Austrians, he will examine it in detail.

"From Füssen he will descend the Lech, making a perfect reconnaissance of it to the Danube; will reconnoitre Ingolstadt and Donauwœrth; will proceed along the Danube, and, going from one to the other, he will have seen this river at Passau, and he will note the fact whenever he sees it from Danauwœrth.

"He will reconnoitre from the Regnitz to the Main; from Bamburg he will return to Ulm by whatever route he may think proper; from Ulm he will go to Stuttgart, always traveling slowly, and by day only; from Stuttgart he will go to Rastadt, and will make a thorough reconnaissance of the road from Ulm to Rastadt, from a military and staff point of view.

"During these various journeys, he will be careful to sketch well the road from Ulm to Donauwœrth by the left bank of the Danube; thence to Ingolstadt and Ratisbon, and from Ratisbon to Passau, from the best information to be had on the subject.

"*Note.*—When he is at Passau, he will reconnoitre the road leading from this place into Bohemia, as far as possible upon Bavarian territory; information upon the rest. Can Prague be reached by this route?

"He will make a detailed reconnaissance of the small stream of the Ilz, and will note the nature of the roads and ground from the source of the Ilz (which comes down from the mountains of Bohemia) to its mouth. What is the width of the valley? What is the character of the roads? the principal towns? and the facilities or inconveniences which would attend the march of an army upon the left bank of the Danube to turn the Inn by this means, in proceeding to Freystadt, with intention of moving into Moravia.

"Collect all information possible regarding the forti-

fications which the enemy has erected, whether at Lintz, Steyer, or any other place as far as Vienna, and even at Vienna itself.

"Determine accurately to what point the Danube is navigable, both in going down and up.

"He will make the Ulm reconnaissance in great detail: population, military position, etc. He will note what is told him upon the Enns regarding the character of the various difficulties which it presents, and also with reference to the width of the Danube beyond the Traisen, some four or five leagues distant from Vienna.

"From Rastadt, he will return to Friburg, from Friburg to Donaueschingen, and from there to Basle; thence he will rejoin me by way of Huningen, without passing through Swiss territory. In going down the right bank of the Rhine, he will make a reconnaissance of the position of Stockach.

"M. Bertrand will write me from Strasburg for the purpose of acquainting me with whatever rumors are current concerning war, peace, and the movements of the Austrians; he will go to Stuttgart, where he will see M. Didelot; he will communicate what he may hear regarding the Austrian forces in Tyrol; he will engage M. Didelot to draw up a statement of all the Austrian possessions in Suabia, ancient, or acquired since the treaty of Lunéville, making his work almost statistical; on his return, he will give me these memoranda, which will indicate that he has not lost his time there.

"He will write me from Munich everything that is said of the situation of the Austrians upon the Inn and in Tyrol; his presentation to the Elector, and everything relative to the other part of his mission; from Munich he will dispatch a courier to bring me his news. From Stuttgart, M. Didelot will send his dispatch to Strasburg by one of his servants; it will be addressed to the Prefect,

who will have it sent to me wherever I happen to be. From Passau he [Bertrand] will report to me his reconnaissances of the Inn and the Danube at Passau, of the Ilz and all that relates to the left bank; he will send the report by an estafet to M. Otto, who will forward it by one of the numerous couriers going to Vienna or Munich.

From Salzburg he will furnish me with the reconnaissance of the Inn or of the Salza, which will be sent by an estafet to M. Otto; should the Austrians be at Salzburg, or should it be inconvenient to proceed to this place, he will not go; from Munich, he will send me the reconnaissance of the road from Salzburg to Munich, and of the left bank of the Danube, made out from such information as he may be able to gather.

"Everywhere his language will be pacific; he will speak of the expedition to England as imminent; the troops once embarked, he will show no anxiety, even to our agents; will pay no attention to the preparations of the Austrians—in a word, will assume that they are not able to commence the war, that such a course would be senseless. "NAPOLEON."

The instructions given General Bertrand may be epitomized thus:

1st. *Reconnaissance of the tributaries of the Danube flowing in from the right*, that is to say, the rivers which the corps of the grand army would have to cross in their march to Vienna;

2d. *Reconnaissance of the course of the Danube between Donauwœrth and Passau*, that is to say, of the principal valley which the army would have to follow after the engagements around Ulm;

3d. *Reconnaissance of the road connecting the Main with the Danube by the valley of the Regnitz.* The directing thought here was with reference to the line of

march which Napoleon had already marked out to be followed by the left corps in October.

4th. *Reconnaissance of the outlets from Bohemia in the vicinity of Passau*, and of a road leading from the Danube into Moravia by Freystadt. The general-in-chief thought he saw here a possibility of a retreat of the Austrians down the left bank of the Danube towards Moravia, and was looking for the means of pursuing them there. His thoughts were fixed upon the fortified town of Ulm, and upon the course of the Danube.

This ensemble of labors was, we see, clearly marked out, and corresponded to a strategic combination already profoundly considered by the future victor of Austerlitz. We shall be able to draw from it the conclusion that *every preparatory reconnaissance of a theatre of operations, in order to be fruitful, should be executed according to the program made out by the general-in-chief himself.*

In 1806, Berthier was charged with having similar reconnaissances made in the valleys of the Main, the Saal, and the upper Elbe.

In 1868 and 1869, reconnaissances of the same kind were made by staff officers in the valley and upon both banks of the Rhine.

To-day, the events which precede active operations have too rapid a march to allow time for making reconnaissance of the theatres of operations at the last moment.

It must be done, then, in time of peace. This study is a part of the work of preparation for war. It should embrace statistical and topographical information designed to complete the maps, and to furnish to the commander-in-chief the means of drawing up his plan of operations.

The points to which the study of the topography of a theatre of operations should relate are extremely numerous: in general, they comprise, first of all, communicat-

ing ways, then the natural and artificial features of the ground. Whatever may be their character, they have, from a statistical and tactical point of view, an influence upon the operations which it would be imprudent to neglect.

I.—Communications.

The topographical features of greatest interest to the general-in-chief are the communications. It is even advantageous in a reconnaissance to note the peculiarities of the country, in connection with the communicating ways. These communications are classified as *railroads*, *ordinary roads*, *and water routes.*

The Use of Railroads in War.— Railroads are almost always accompanied by telegraph lines. Their creation has brought about great changes in the character of theatres of operations ; and these changes have a scope and bearing which will be made clear by indicating the rôle played by railroads in time of war.

Railroads can, in a few days, transport to great distances large masses of troops and enormous quantities of war material. As a result of this, a state whose army is so organized as to admit of its transportation to the frontier more rapidly than that of the enemy, will, with equal forces, greatly advance its chances of success.

A well-planned system of railroads, which will allow the forces of a country to be concentrated in the shortest possible time, is, then, an offensive arm of the first order. It constitutes, at the same time, an instrument of defense more efficacious even than fortresses, for the first step in the preparation for defense is the assembling of sufficient forces upon the frontier in time to prevent access of the enemy.

It follows from this that the first care of a state in organizing the defense of its frontiers should not be to

envelope itself with a girdle of fortified places, but to cover its territory with a system of railroads, thus assuring the most rapid concentration.

Importance of their Direction.—A state, therefore, which seeks to place itself in the best condition for defense, should be master of its systems of railroads, and take into account the requirements of commerce and industry only as subordinate to strategic considerations. But these principles have not been everywhere understood. In certain countries, only a moderate degree of importance has been attributed to these new means of communication. In others, even after the conclusive examples of the last war, their military rôle has been misunderstood, and their construction been permitted in directions repugnant to the most obvious mandates of prudence.

The working of these roads in a manner to obtain from them their maximum yield for military purposes, is a matter of great difficulty. Generally the junction points of these systems are troublesome places; certain lines cannot transport the military trains; and, again, the service varies with the character and resources of the different systems.

Their Influence Upon the Movement of Armies.—There is no doubt that railroads have a weighty influence not only upon the beginning of operations, but even upon the general character of the war itself. Their employment, it is true, cannot affect the movements of armies in course of operations, nor modify either the general direction of these movements or the application of the principles of strategy; but they extend the field of combinations by enabling an army to rapidly draw to itself the disposable troops found at various points of the territory. Such troops can, thanks to these roads, take their place on the battle-field at short notice.

Especially to the belligerent who defends his own territory is this advantage assured.

"During the campaign on the Loire in October, 1870, 28,000 infantry of the 15th French Corps, were transported from Salbris in Sologne, by way of Vierzon and Tours, to Mer, near Blois, between 7 o'clock on the morning of the 27th and 9 on the evening of the following day, without attracting the attention of the Germans. By 8 o'clock on the morning of the 29th, besides these, 16 batteries, 2 regiments of cavalry, munition trains, etc., had arrived. In November of the same year, 40,000 troops of the three arms of the service, under General Crouzat, were moved in three days on 88 railroad trains, from Besançon upon the Doubs, to Gien upon the Loire. The German staff learned of this movement only when these troops had reached their destination. Repeatedly during this campaign, French trains were dispatched one after another at intervals of ten minutes or less.

"On the other hand, the attempt made in December, 1870, to transport the army of General Bourbaki with great celerity from the Upper Loire to the valley of the Doubs, failed because of insufficient preparation, and lack of unity in execution. Seven days were required to embark two army corps, and the division forming the reserve. Altogether, ten days were consumed in making this journey, which was expected to require but half this time. An army corps joining it later, occupied from the 4th to the 16th of January in moving from Nevers to the upper Doubs, near Belfort; for, in consequence of the accumulation of troops and convoys, material and food, transportation was rendered singularly difficult. It would, therefore, have been wiser to march these troops, rather than persist in using the railroad, especially as this was the only one running along the upper Doubs. Removal of troops from the trains was rendered very

difficult by the scarcity of stations; it was not possible to construct sidings between the river and the rocky walls of this narrow valley."*

The employment of railroads for the movement of troops in the enemy's country will be less common, because the transportation of the invaders' supplies will occupy all the railroads at his disposal.

However, the war of 1870–1871 furnishes us with several interesting examples in this connection.

"The 14th Division of Infantry, which toward the end of 1870 was besieging the fortified places on the northern frontier of France, was transported thence to Châtillon-sur-Seine by rail, between 7th and 14th January, 1871. On the latter day, the combatants of the division had united at Châtillon; the train and the columns had not yet arrived.

"After the taking of Strasburg, the landwehr division was transported to the vicinity of Paris. It commenced the journey on 7th October, but, being compelled to use an encumbered line, it moved by successive parts, reaching Nanteuil between the 10th and 19th.

"In like manner, the II. Army Corps was transported from Metz to Paris. The 3d Infantry Division, with 10 battallions, 1 squadron, 4 batteries, a company of engineers, a hospital detachment, a supply train,† and 120 wagons of the military equipage train, made the journey in 24 railroad trains, from the 3d to the 8th of November. The 4th Division had begun to embark at Pont-à-Mousson at noon on the 26th of October. On the 6th of November, the combatants of the division, with the hospital detachment, field ambulance, and the indispensable service trains, were assembled at Lonjumeau. A part of the corps marched from Metz to Paris."‡

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*_The Nation in Arms,_ by Baron Von der Goltz.

†Bake-house equipments and field ambulances.

‡_The Nation in Arms,_ Baron Von der Goltz.

Sometimes, on the eve of battle, railroads afford transportation to the field for detachments too distant to arrive in season by the ordinary roads, thus unexpectedly changing the proportion of combatants.

On August 6, 1870, 3 battalions of the 13th Prussian regiment, and 1 battalion of the 20th, were transferred by rail from Neunkirchen to the battle-field of Spicheren.

The 4th light battery of the I. Corps, arriving the same day from Koenigsberg by rail, was to have been halted at Neunkirchen. It was resolved, however, to continue the journey, and the battery was thus able to reach the field of battle by a quarter past six.

In January, 1871, Von Moltke, wishing to reinforce the Army of the North, then on the point of opening the battle of Saint-Quentin, ordered the Army of the Meuse to reinforce it by rail with the 16th Infantry Brigade and a light battery. These troops should have proceeded from Gonesse to Tergnier by way of La Fère. But the lack of material, and the difficulties connected with unloading, so retarded the movement, that the first battalion, expected on the 17th January, could not leave the train before 8 o'clock on the morning of the 18th, and the last battalion did not accomplish this until the afternoon of the 19th, the very day of the battle. In consequence of these delays, only the four battalions of the 86th regiment reached the field of action from Tergnier; the remainder of this brigade was stopped *en route*, in consequence of the favorable issue of the contest, and sent back to Gonesse.

When the I. German Army, in 1870, was covering the investment of Paris against the improvised troops which we were assembling at Cherbourg and other places in the North, it was obliged, with a reduced effective, to protect Rouen, Amiens, and the line of the Somme. It then made use of the railroad from Rouen to Amiens,

about 111 kilometres [69 miles] long, to direct detachments here and there upon the menaced points.

It is especially with reference to the feeding of armies that railroads have produced unexpected changes, and have become of paramount importance. One of the first results of their construction has been to change the nature of bases of operations; and they have, in a certain measure, supplanted the latter. Formerly, indeed, an army in the field was obliged to establish at the large frontier places in its rear, vast magazines and depots, designed to meet the enormous drain upon its resources. To-day, railroads, seconded by the telegraph, permit the defensive to leave its supplies in the principal cities of the interior, or in the same places as in time of peace, and to receive them with the least possible delay. On the side of the offensive, they give to each army corps a rapid and sure means of drawing from its own region all needed supplies. But even if each corps had at its disposal a railroad and telegraph line for communication with the centre of the country, it would, nevertheless, be always advantageous to establish an intermediate depot between the corps region and the theatre of operations. For this purpose, an important station of this same line of railroad is usually chosen. This place is called the *temporary station.* If the line is double, its carrying power will be at its maximum, and communication will be correspondingly facilitated. It is very evident that if each corps in the field were capable of providing for its own wants, the commander-in-chief would be disembarrassed of a multitude of anxieties.

In 1866 and 1870, in the Prussian armies, the different corps were thus in direct communication with their centres of supply.

It was especially in these two wars that the necessity of organizing the service of railroads in the rear of armies was made clear. To-day we recognize that it is princi-

pally through the railroad that the setting in motion of the large masses composing modern armies is made practicable.

It is equally certain that the more numerous these roads become in rear of the zone of operations, the easier will it be to place large effectives in line, to provide for them, to keep up their numerical strength, and to attempt the investment and siege of those strong intrenched camps which most states employ to-day for the protection of their frontiers.

As the result of experience, then, in the wars of the future, armies will take a considerable interest in having new branch railroads constructed in their rear, according as they advance.

In this connection, it may be said that the number of technical railroad troops attached to armies does not appear commensurate with the needs arising in an offensive campaign in which large masses are engaged. This is a new contingency to provide for.

To sum up, rail and telegraph lines play an important part in the front of armies before the commencement of operations, and in their rear during the continuance of these operations. The railroads found in the space between the belligerents, are destined to be destroyed by the side compelled to give ground, and to be immediately reconstructed by the opposing forces. In all these cases, it would be impossible, to-day, to choose a line of operations without taking into account the railroad which usually follows its principal direction, and without choosing for objectives the most important cities lying upon it.

Ordinary Roads.—Notwithstanding the existence of railroads, ordinary roads have lost nothing of their importance within the zone of operations itself and in its immediate neighborhood, especially upon the front and

flanks of armies. There, as formerly, they still represent the principal means at the disposition of the general-in-chief for the movement of his troops. Previous study of them is the more essential, now that the effectives have been so largely increased. It is, therefore, even more necessary than formerly to properly regulate in advance all the dispositions for the march, and to limit the use of each road with precision. The number of practicable roads has been increased, it is true, during the last few years; but it is still so limited as to make it often difficult, in strategic marches, to give more than one to an army corps. After all, then, it is by the ordinary roads that armies must move toward the decisive points of theatres of operations. The study of these roads is consequently one of the indispensable tasks in the preparation for war. We have to-day *Traveling Guides* describing them, which did not formerly exist, but which can by no means take the place of military reconnaissances.

Reconnaissance of Roads.—There should henceforth be, then, as a part of the general staff, a permanent traveling service for foreign countries. The officers charged with this duty should make out itineraries of previously designated regions. The principal lines of operation, corresponding to possible future campaigns, should first be studied; next the intermediate and transverse lines; and, finally, accidents of ground and military positions. These first works, classified according to *projets* of operations, and kept up to date, would serve as a basis for the combinations held in readiness for a state of war.

Profiting by the facilities then afforded, there should therefore be executed in time of peace, those reconnaissances which Napoleon in the beginning of the century directed his generals to make before operations, and which he thus defined:

"When I order a reconnaissance, I do not wish to be given a plan of campaign. The word *enemy* should not be mentioned by the engineer. He should study the roads, their nature, the grades, heights, defiles, and obstacles; learn if carriages can pass; but abstain entirely from giving *projets* of compaign."

Here, moreover, is the way he intended the work to be executed:

"CAMP OF BOULOGNE, 10th Fructidor, Year XIII. (Aug. 28, 1805.)

"*To General Savary.*

"General Savary will proceed to Landau, and thence to Germersheim. He will cross the Rhine in the vicinity of Germersheim, at the point he considers most favorable for the establishment of a ponton bridge. He will make such observations at Philippsburg as shall enable him to give an accurate account of the condition of the place. He will then proceed to Bruchsal; thence to Knittlingen, thence to Vaihingen, Cannstadt, Gmünd, Aalen, Giengen, and Gundelfingen, on the Brienz, half a league from the Danube. He will travel only by day. He will make note of all the lateral communications which exist, on the one hand, between this road and that from Durlach to Ulm, by way of Pforzheim, Stuttgart, Esslingen, Gœppingen, and Geislingen, and, on the other hand, between the road which he is to take and another leading from Wiesloch to Sinsheim, Heilbronn, Œhringen, Hall, Ellwangen, Neresheim, and Dillingen, upon the Danube. He will give an account of each of the cities, villages, bridges, castles, hills, woods, or remarkable places met with, and the distances between them, specifying the cities, villages, or castles which would serve to lodge troops. The Enz at Vaihingen, and the Neckar at Cannstadt,

merit special attention, and he will mark their width, and the difficulties or facilities which these two rivers present for the passage of troops. He will observe the breadth of the large valleys, and note the distances between the mountains of the Black Forest, or those separating the valleys of the Rhine and the Neckar, and the various points of importance along his route. He will take cognizance of the best communication existing between Gmünd and Giengen, whether by Heubach, Heidenheim, Weissenstein, or Langenau. He will examine these roads personally, for the purpose of ascertaining positively which is the most favorable for the transportation of the *matériel* of an army.

"General Savary will then in person seek the best road lying between the one traced above from Philippsburg to Gundelfingen, and another road leading from Dillingen by Neresheim, Hülen, Ellwangen, Hall, Œhringen, Heilbronn, Sinsheim, Wiesloch, and Spire, assuring himself that the road in question is, in some degree, parallel to the other two. This road, which should be practicable for artillery, and military transports, should lead either from Aalen toward Murrhardt, Loewenstein, and Heilbronn, or better still, from Aalen to Gmünd, thence to Winnenden, Marbach, Bietigheim, Sachsenheim, and Knittlingen, and then by way of Bruchsal to Philippsburg. If there is a good and practicable direct communication from Giengen to Gmünd, it should be preferred. Having returned to the vicinity of Philippsburg, General Savary will examine the right bank of the Rhine to near Spire, and will again turn toward the Danube, and proceed to Dillingen by way of Wiesloch, Sinsheim, Heilbronn, Œhringen, Hall, Ellwangen, Hülen, and Dischingen. He will carefully examine this road, its different branches, and the Neckar at Heilbronn. He will then follow the Danube from Dillingen to Ulm, and thence proceed to Gœppingen, giving

close attention to this portion of the road. He will assure himself of the means of communication between this city and Gmünd. From this place he will proceed to Esslingen and Stuttgart, where he will again observe the Neckar, going thence to Pforzheim, Durlach, and Mühlburg, examining the Rhine opposite Pforz. He will then join the Emperor wherever the latter may be.

"NAPOLEON."

The reconnaissance prescribed to General Savary concerns more especially the roads which the corps of the right of the grand army were to follow in moving from their base upon the Rhine to Ulm. The project of making the various corps converge upon Ulm had its origin in the same thought that dictated this work.

The conclusion to be drawn from this is analogous to that before suggested by the instructions given General Bertrand—in order to be of use, preliminary reconnaissances of the ground should be directed by the general who is to carry on the war.

The reconnaissance which Murat was ordered to make at this same period, completes the preceding, and shows, in a still more precise manner, how necessary it is that these labors be executed with a view to a special hypothesis of war, and a preconceived combination.

"*To Marshal Berthier.*

"CAMP OF BOLOUGNE, 7th Fructidor, Year XIII. (Aug. 25, 1805.)

"Marshal Murat will start to-morrow, in a post-chaise, under the name of Colonel Beaumont, direct for Mayence, where he will stop only to change horses. He will proceed to Frankfort, and on this occasion will reconnoitre Offenbach; will then go to Würzburg, which he will reconnoitre, stopping there a day and a half; and

he will observe the connections of this place with Mayence and the Danube, taking particular account of the roads leading towards Ulm, Ingolstadt, and Ratisbon. Thence he will repair to Bamberg, upon the Regnitz. From Bamberg, he will proceed to the frontiers of Bohemia, near Eger, without entering Austrian territory, and he will keep upon neutral ground not occupied by Austrian troops. He is expressly forbidden to enter places where there are such troops. He will note the position of Bamberg with reference to Bohemia and the Danube; will take particular account of the mountains of Bohemia; will prepare an itinerary of the road from Bamberg to Prague, and especially of the gorges of the Eger; will, first of all, procure the campaign of Marshal Belle-Isle. He will follow the Regnitz, passing through Nuremberg and across the Woernitz. After that, he will travel along the left bank of the Danube, passing rapidly through Ratisbon; will arrive opposite Passau; will cross the Danube; will follow the Inn as far as Kufstein; will pass through Munich; will go to Ulm; thence to Stockach, visiting the battle-field of Moesskirch; will glance at the different outlets of the Black Forest, and will so manage as to be in Strasburg on the 24th Fructidor. He will form a general idea of the country, the size of the rivers, and whatever else he may deem necessary, locating the various points with reference to Tyrol and the Danube; will not enter a country occupied by the Austrians, and if they have crossed the Inn, he must not fall in with any of their posts; will take with him an officer or a secretary who speaks German; demand will be made upon Jean-Bon-Saint-André* for one, but the latter will not be informed of it.

"The horses will leave Paris quietly, with the trains and staffs.

"NAPOLEON."

* Prefect of Mayence.

River Communications.—There yet remains to be considered the importance of water communications. In the matter of transportation of troops and supplies, this importance exists only in case of water-courses parallel to the line of march. Here, they become useful auxiliaries, and complete the lines of operation of which they themselves constitute a part. Army commanders in this case hasten to utilize them by seizing, as soon as possible, all means of navigation found upon their banks.

In 1805, after the capitulation of Ulm, Napoleon resolved to march immediately upon Vienna, following the valley of the Danube. The river, which ran parallel to the direction of his march, was to become part of the line of operations.

But beyond Linz, the road was shut in between the river bank and the mountains. It was thus indispensable to assure the possession of the left bank, in order to attempt to cut off the retreat of the Russians, and to cover the march of the army on this side.

Dupont's division, numbering hardly 3,480 men, in 6 battalions, was charged with this duty, and with making reconnaissances of the roads leading into Bohemia. But these forces being soon found too weak, Napoleon reinforced them with Gazan's division, having an effective of 4,460 men.

There was thus upon the left bank a small army corps, which was placed under Marshal Mortier. He was to move down the valley on the side then occupied. It was not prudent, therefore, to leave him unprotected.

It became necessary to connect him with the principal body; and, for this purpose, Napoleon, having assembled all the boats that could be found, formed them into a flotilla, which he placed under the orders of Commander Lostange. The crews were composed of the worn-out and foot-sore men of each division. These boats, loaded with supplies and ammunition, descended the Danube abreast of the army.

Napoleon desired 400 of these boats, so as to be able to suddenly embark 10,000 men, and throw them upon the Russians in an hour, if Mortier found himself too strongly engaged. "There must be no Danube," wrote he from Linz, "on 7th November. I must be able to cross it promptly. The Russians, who do not expect this manœuvre, may become the victims of it, since they think themselves engaged only with Marshal Mortier, while I shall be able to bring a superior force against them."

The river thus became a means both of communication and of transportation. The army had for line of operations the road from Linz to Vienna, with the water-course parallel to it on the left.

It was divided into two principal masses. The one, composed of the corps of Soult, Lannes, Bernadotte, and the Guard, preceded by Murat's cavalry, advanced along the right bank, which was the more exposed. It numbered about 53,000 infantry and 16,000 cavalry. The other was weaker, consisting, as we have said, of a provisional corps upon the left bank.

The river, instead of separating them, served, thanks to the flotilla, which bore the impedimenta, as a means of connection.

In the campaign in Egypt, the Nile had been utilized in the same way.

We shall be warranted in concluding, from this example, that, in order to make use of a water-way parallel to an army's line of march, it will be necessary generally:

1st. *To seize all the boats that can be found;*

2d. *To occupy the points of passage in advance of the front;*

3d. *To hold both banks;*

4th. *To march the principal mass upon the more exposed bank.*

These facts of themselves indicate what points should be noted in making reconnaissances of water-courses.

The tactical importance of these courses, when parallel to the line of march, varies according to circumstances.

When, instead of pursuing the course of a single river, an army follows a system of streams, the situation is changed. The rivers along which the troops are proceeding become positive obstacles. They isolate the columns marching between them, and the points of passage acquire in this case a capital importance. It is clear that in order to assure connection between the various forces, these points must be occupied in advance.

In 1813, the army of Schwarzenberg, leaving the mountains of Bohemia, descended to the plains of Saxony, pursuing the course of the numerous affluents of the Elster and the Elbe. It thus followed:

The Saale, which had bridges at Dorneburg, Kosen, Naumburg and Weissenfels;

The Elster (bridges at Pegau, Zwenckau and Zeitz);

The Pleisse (bridges at Lobstadt and Altenburg);

A tributary of the Pleisse (bridge at Borna);

The Partha (bridge at Lausigk);

The Mulde (bridges at Kolditz and at Grimma) (*See Plate I.*)

Upon arriving in this region, Schwarzenberg issued the following order:

"October 14, 1813.

"Count Giulay will occupy Weissenfels with the main part of his corps, pushing his advanced-guard upon Lützen. He will guard the bridge of Weissenfels, upon the Saale, and detach two battalions with a squadron for the bridges of Naumburg and Kosen, endeavoring thus to connect with the army of the Crown Prince of Sweden.

"To assure the communication between Borna and Pegau, General Wittgenstein will send two battalions and a cavalry detachment to occupy the bridge of Lobstadt upon the Pleisse.

"To keep up communication with General Knörring at Kolditz, General Klenau will send a detachment from Borna to occupy Lausigk."*

In such cases, we see, water-courses, far from being of service, are a positive hindrance. Reconnaissances should pay especial attention to all the points of passage, as well as to the means of assuring their possession.

To-day it might at first seem that, with the aid of steam, river navigation should become a greater aid to armies than formerly. This, however, is somewhat doubtful.

In the first place, it is rare that the directions of the rivers of Europe are identical with the probable lines of operations. This is shown, for example, in the case of France, Germany, and Russia, with reference to operations carried on from east to west, and *vice versâ*.

Finally, rivers can float steamboats of heavy tonnage only in the middle or lower portions of their course. Here again their use is narrowed, for to second the movement of modern masses, powerful means of transportation are required.

Recent wars demonstrate the truth of this observation. In 1866, 1870, and 1878, once the operations had begun, we saw that armies made but little use of river communications. And yet, only a century ago, the Elbe was regarded by Frederick the Great as a principal line of communication for a Prussian army operating in Bohemia.

It was only in the *beginning* of the last campaigns that the Rhine and the Danube were used by the Germans and Russians, for transportation of supplies, and then only in those parts where navigation was easy.

In 1870, during the concentration of troops, the staff of the II. Prussian army organized a flotilla of ten

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* General Pierron.

steamboats and numerous tow-barges, which were to serve as movable magazines upon the part of the Rhine between Worms and Bingen. The provisions carried were purchased in Holland, on the lower Rhine, and in the countries where the concentration took place.

But when the Prussian armies penetrated our territory, the freight of these boats was deposited in the magazines of Bingen and Worms.*

Upon the whole, sea transports are the best fitted to actively second the movements of armies. But for this, special conditions are necessary, which no longer pertain to the study of a theatre of operations; and notwithstanding the examples given by France at the outbreak of the Crimean War, by the United States during the War of Secession, and by Turkey in 1878, this method will for a long time yet be only exceptionally available for the transportation of the large masses composing modern armies.

II.—Natural Obstacles.

I. WATER-COURSES.

The natural obstacles which have the greatest influence upon operations are *water-courses* and *mountain ranges.*

The direction of water-courses determines their influence.

Parallel to the march of armies, they are, as we have just seen, a means of communication and transportation.

But their military rôle does not end here, and, unfortunately, the war of 1870 has shown us that this rôle has not always been understood. It will then be of benefit to examine this subject.

Certain streams become natural lines for the invasion

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*Von der Goltz.

of the countries through which they flow. Such are the Danube, for Austria; the Po, for Italy; the Elbe, for Prussia; the Oise, the Marne, and the Seine, for France.

In this case, they generally serve the offensive as a *point of support for a wing*. The Danube was thus utilized in 1805 and 1809.

But it is especially as a base of manœuvres that water-courses have a decisive influence upon the operations.

In 1809, the Archduke Charles, beaten at Eckmühl, crossed the Danube at Ratisbon, made a demonstration of recrossing it towards Krems, and, covering himself by this formidable obstacle, proceeded to take position in front of Vienna.

In 1813, Napoleon transformed Dresden into a double bridge-head, and, profiting by the advantage which this central position gave him, successively assailed each of his enemies.

In 1870, the Moselle at Metz, could have been made to play a part similar to that of the Elbe at Dresden.

When a water-course is perpendicular to an army's line of march, it becomes an obstacle for the assailant and an aid for the defender.

It is, then, its defensive rôle which gives it its importance. A wide, deep stream, with rapid current, defended by fortified places, constitutes a formidable obstacle to offensive operations, and often enables the opposing force to make a successful resistance.

It was thus that in 1796 the Adige, from Legnago to Rivoli, served as a line of defense to cover Italy against attacks coming from Friuli.

In 1877, the Danube might well have served the Turks for a first line of defense; but their apathy permitted the Russians to pass it without difficulty.

In 1870, the Moselle might have been thus used by the French army to cover the country against the invasion of the Germans.

For this, it would have been necessary to blow up all the bridges above and below the defensive position, while preserving upon the front only those protected by fortifications; to concentrate the army upon the left bank; and to actively guard by cavalry, all points of passage.

Marshal von Moltke took this hypothesis into consideration, and for a time supposed it was our intention to defend the Moselle from Metz to Thionville. But we did nothing of the sort, and the heads of columns of the X. Prussian Corps were able to occupy the bridges of Pont-à-Mousson without firing a shot.

The importance of rivers as defensive lines, obliges armies, in their offensive marches, to seize all bridges by cavalry, as soon as possible, and to bring their heads of columns upon the banks simultaneously. Rivers mark, thus, a succession of strategic fronts and stations.

From a tactical point of view, the defensive value of water-courses perpendicular to the line of march is still greater. Their crossings are defiles difficult to pass and easy to defend. Moreover, their banks frequently offer shelter and commanding positions, which the defense has often turned to account in wresting the advantage from the assailant. The battle of Traktir, in the Crimea, is an example of this.

Such water-courses are, in certain cases, obstacles of an almost insuperable nature. Thus, the passage of a river under the fire of a determined adversary, is one of the most difficult operations of war. Here but little can be done successfully except by surprise—through demonstrations which deceive the enemy as to the real point of passage; or by an open attack with a preponderating force, an operation always attended by bloody contests.

The successful passage of such courses by surprise has always been accomplished in the same way: the assailant makes a demonstration upon one point and crosses in force at another.

In 1796 the Army of Sambre-et-Meuse, under orders of Jourdan, intending to effect a crossing of the Rhine by surprise, first made a feint at Neuwied. It then moved 25 leagues to Dusseldorf, where were found a favorable re-entrant and an island. Here, under the powerful protection of 80 pieces of artillery, it made a successful passage of this broad river.

In 1859 the French Army concentrated upon the right bank of the Po, in the vicinity of Alessandria, while the Austrians counted upon using the Ticino as a first line of defense. (*See Plate II.*)

Our troops were to attempt a crossing by surprise.

Our right, under orders of Marshal Baraguay d' Hilliers, made, on 27th May, a reconnaissance toward Piacenza by way of Voghera. The Austrian general-in-chief, believing that the passage was to be attempted in this vicinity, concentrated his left here and evacuated Vercelli.

This city was at once occupied by the Piedmontese. Then the bulk of our forces, crossing the Po at Casale, moved upon Novara and Buffalora.

To carry out our plans for the passage of the Ticino, General Espinasse, on the 2d June, moved his division along the road leading from Novara to Milan, by way of Trecate. He reached the bridge of San Martino, before Buffalora, and made a show of crossing there. The Austrians charged with the guardianship of the bridge, blew it up and retired.

In the meantime Camou's division, the light troops of the Guard, marched up the river upon Turbigo. The scouts thrown upon the left bank at once scoured the neighborhood. Under their protection, the pontoniers threw three bridges, enabling one brigade to cross during the night, and occupy the ground beyond.

The next day, the 3d June, the 2d Corps (MacMahon) crossed the Ticino without difficulty, and moved upon Buffalora.

Thanks to this movement, the remainder of the army crossed the Ticino opposite this last place on 4th June.

The passage of the Moselle by the II. Prussian Army in 1870, may also be considered as executed by surprise. The details of this movement have not perhaps been sufficiently noticed.

On the 12th August, 1870, the Prussians, seeing us in position upon the French Nied, believed that we were intending to bring on a decisive action here, and they had not yet thought of securing the passages of the Moselle, although that river was hardly 20 kilometres distant.

But on the afternoon of the same day, their advance squadrons reported the country clear up to that river. At the same time, the I. Army reported that our forces were abandoning the Nied. Von Moltke concluded from this that we were retiring beyond the Moselle.

He then ordered his cavalry to cross this stream; the II. Army to take possession, as soon as possible, of the bridges of Pont-à-Mousson, Dieulouard, and Marbach; and the I. to hold us north of Metz.

This movement of the I. Army was a veritable demonstration to the north of this place, at the same time that the main forces were to seize the passages of the Moselle to the south and cross unopposed.

This operation indeed was actually carried out, favored by our carelessness. Such a contingency as the necessity for defending the Moselle not having been foreseen, no one thought of it at the decisive moment, and even the bridges were not destroyed.

If the study of the topography of the frontier had been made before the war with a view to the defensive, we would, no doubt, have recognized a fact plain to the Germans, that the Moselle, between Metz and Thionville, a distance of 26 kilometres, with these two places as points of support, furnished a strong defensive line.

We would then have blown up the bridges from Lunéville to Metz.

This line, was, however, exposed to a turning movement from the south; hence that part of the river between Metz and Dieulouard, with the Ache to cover the right flank, would, perhaps, have appeared preferable.

In this case, it would have been essential to determine in advance the defensive works necessary to be organized, on the one hand, between Metz and Thionville, and on the other, between Metz and Dieulouard.

The most instructive modern example of the passage of a river by surprise, is the crossing of the Danube by the Russians in 1877. (*See Plate III.*)

At the end of June, the concentration of their army was finished. The time to place it upon the right bank had arrived. The operation was difficult. The Turkish army defended the line of the river, and appeared to keep active watch at all points. Moreover, the strength of the current, and the width and depth of the stream, added to the dangers of the enterprise.

The Russian staff caused two demonstrations to be made. The first took place at Braila, facing Dobrudja, on the 22d of June. This was, however, more than a mere offensive manœuvre. One of the great political objects which Russia had in view at this time, was to assure possession of the mouths of the Danube by seizing Dobrudja, a province which she claimed as Slavonic territory.

A bridge had already been thrown across the Danube before Braila, and the fleet was collected at the mouth of the Sereth. The Turks opposed no obstacle to these movements; they had, moreover, few troops in this vicinity.

During the night of the 21st, ten companies of Russian infantry in boats were thrown upon the right bank, and drove back the detachments of the enemy. Reinforce-

ments followed. The passage was effected, and soon the whole of Dobrudja fell into the hands of the assailants.

The second demonstration took place at Flamunda, below Nicopolis. The bulk of the Russian forces was apparently assembled here, together with the bridge equipages, the staffs, and the principal impedimenta. At the same time an army corps with a few boats was sent to Zimnitza. These preparations seemed to indicate a demonstration at the latter place, and a strong attempt to pass at Flamunda.

While these movements were in progress, the Russian artillery, on the 24th and 25th of June, opened a sharp fire against the defenses of Nicopolis and Rustchuk, to give the impression that an attempt to cross was about to be made near these two places.

At the same time, the general-in-chief himself pushed forward a reconnaissance upon the approaches to Zimnitza, and confided his plan of passage to the corps commander, who was to be entrusted with its execution.

At this point, the Danube was 800 metres wide; its waters were rapid and deep; and, finally, the Turkish bank commanded that of the opposite side. All circumstances seemed unfavorable. Nevertheless, on the afternoon of June 26, the commander of the corps in position at Zimnitza concentrated his forces, and at two o'clock on the following morning, the first convoy of pontons was launched. It bore a regiment of infantry, 60 Cossacks, and the officer directing the operation. After a passage occupying three-quarters of an hour, executed without accident, these troops landed, receiving only a few shots from the enemy's outposts stationed upon the bank.

But the latter retiring, gave the alarm. The Turkish forces at Sistova and the vicinity assembled in haste and immediately opened a violent infantry and artillery fire upon the succeeding pontons. Nevertheless, the passage continued; five boats, struck by shells, were

sunk, with the passengers and material carried. Two field-guns were thus lost.

General Dragomiroff, commanding the division, crossed with the third detachment, and assumed direction of affairs.

He immediately attacked Sistova and the heights to the south. The struggle was obstinate from 3 o'clock in the morning till 2 in the afternoon, and was supported by the fire of artillery, which lined both banks. Finally, on the afternoon of the 27th, the Turkish fire abated and the combat ceased.

The passage had been successful. It cost the Russians 200 killed and 568 wounded, or 768 men *hors de combat.* The crossing continued uninterruptedly during the succeeding days, terminating on the 29th.

Here the passage by surprise was quickly transformed into a passage by force. But, as a matter of fact, the success of the operation was assured from the very beginning of the struggle.

The passage of rivers by force, of which past wars offer us examples, has become an operation of very questionable utility for armies of the present day.

The power and precision of modern arms is such as not to admit the supposition that in the future the open passage of a river, under the eyes of a resolute and warlike enemy, can be attempted before his resistance has been at least partially overcome, and the cohesion of his troops has been shattered.

As a result of these considerations, we see that the influence of water-courses upon the conduct of an army's operations may be of great importance.

In certain cases, these offer excellent points of support to cover the flank of an army. And, finally, the possession of a river and its crossings permits special manœuvres which have often led to the happiest results. Ordinarily, such possession favors turning movements,

which aim at menacing the enemy's line of communications. The passage of a river upon the adversary's flank or rear is always followed by serious consequences.

It was the passage of the Moselle above Metz in 1870 by the Prussian armies, which led to the battles of August 16th and 18th, and which forced our troops to fight separated from their base of operations. The driving of these forces into the intrenched camp of Metz, the investment, and, later, the fall of this place, were the consequences of it.

As a rule, a theatre of operations cut up by large water-courses offers serious obstacles to an army, and requires a minute reconnaissance in advance.

The theories held by the Germans tend to confirm these views.

For them, "water-courses are essentially obstacles to the movement of armies. They can be crossed only by artificial means, and their passage is always attended by loss of time.

"The defender can easily destroy the bridges after having used them. If for one reason or another he does not wish to do so, the fire of a relatively weak force is sufficient to prevent the assailant from making use of them. The latter is then obliged to drive away this force, either by fire directed from the opposite bank, or by attacking it with troops that have crossed at another point.

"There are two means of accomplishing this crossing; viz., by boats and service bridges. The establishment of such bridges cannot be effected everywhere. Their preparation alone requires a certain space of time, amounting, in the case of large rivers, to hours. In such a situation, the fire of small detachments of the enemy posted upon the opposite bank is sufficient to prevent the work.

"With boats, even under favorable conditions, only comparatively few troops can be crossed in several hours.

"Bridges form defiles, in passing which an army consumes several days. During this time, it is exposed to attack, and remains in a critical situation. If it seeks to effect a crossing at several points, it must divide its forces, and while in transit, each column presents to a vigilant enemy a favorable opportunity for destroying it while separated from the others.

"Even when an army has succeeded in crossing a water-course, it finds itself upon the other bank in a much less favorable situation than its adversary: it then has obstructions upon its line of retreat, and in the combats which follow, is generally at a disadvantage.

"Rivers offer then great advantages as lines of defense.

"We see that their passage within the radius of the enemy's field of operations, and the occupation of the opposite bank, will fail whenever the defender succeeds in destroying the first detachments before the arrival of reinforcements.

"In reality, however, it never happens that the defender can long prevent the successful crossing of a numerically superior enemy. * * * It may then be said that the defense of rivers cutting the adversary's line of operations, should be looked upon as but little more than an expedient for gaining time. * * *

"The defender ought then to employ only the number of troops necessary to observe and arrest the enemy.

"With this in view, he should establish the bulk of his army at such a distance from the river as to permit the utilization of his entire force in case the enemy attempt the passage. Upon the stream itself, he should place only observation troops. While preventing the enemy from seeing what takes place in the ranks of the defense, these will at the same time serve to increase the feeling of danger which the passage of a river always inspires.

"An army which undertakes a crossing in presence of the enemy, should know, beyond all question, that it possesses an incontestable superiority.

"A river whose course is parallel to the general direction of march, makes it difficult to re-unite the troops operating upon its two banks. The commander who, to escape the danger of this situation, holds to a single bank, is in certain cases, contrary to his desires, obliged to concentrate his forces, and to abandon the other bank to his adversary.

"In general, the possibility of passing from one bank to the other, without seriously modifying the direction of the line of communications, augments the number of possible strategic combinations, to the detriment of that adversary who is forced to regulate his movements by those of the other." *

The opinion of Napoleon upon the importance of rivers, viewed with reference to operations, is of especial interest.

"A river," he wrote in 1808, "be it as wide as the Vistula, and as rapid as the Danube at its mouth, is nothing, unless there are means of crossing to the other bank, and a head quick to seize the offensive." †

"A line such as the Rhine, or even the Vistula, can be held only by occupying the bridges, which will give opportunities for taking the offensive." ‡

"A river has never been considered as an obstacle which could cause more than a few days' delay; and its passage can be defended only by placing troops in force at the bridge-heads upon the farther bank, ready to take the offensive as soon as the enemy commences his crossing." §

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* Colonel Blume, *Strategy*.

† Note upon the situation in Spain, August 20, 1808.

‡ Note upon Spanish affairs, September 30, 1808.

§ Letter to Prince Eugene, March 15, 1813.

II. MOUNTAIN RANGES.

Mountain ranges always inconveniently cut up the theatre of operations. To be free to pass from one side to the other, an army must hold the summits commanding the heads of valleys, and the defiles.

Strategically, mountain chains, like rivers, have two principal directions.

Perpendicular to the lines of invasion, they favor the defense; if the passes are few and stoutly defended, the offensive is subjected to considerable delays. Masters of the defiles, the defensive can menace the communications of the assailant, and by an obstinate struggle sometimes compromise his position.

These advantages pass to the offensive when it, in turn, controls the range and passes; but going beyond, it is inconvenienced by the presence of these defiles upon its line of retreat.

Parallel to the lines of invasion, mountains permit the defense to debouch upon the enemy's rear by the defiles in its possession. It follows from this, that an assailing army can utilize a chain parallel to its line of march only when in possession of both slopes. From every point of view, therefore, a mountain chain is an obstacle for the offensive in strategy as in tactics, and an advantage for the defensive.

This will be made clear by facts to be considered further on.

In general (according to Blume), "mountains diminish the facilities for traffic. Consequently they are sparsely inhabited, and offer few resources for the maintenance of armies. In the higher regions, they are not even practicable during several months of the year.

"In mountainous countries, communications are few and inconvenient. Consequently, the movements of troops are here more fatiguing, slower, and less regular

than on the plains. The length of the columns and the duration of the marches are always increased, and more difficult to calculate.

"Except along the frequented roads, only small detachments of troops can be moved. Hence the junction of columns moving on opposite sides of a range is uncertain and difficult.

"Among mountains, the sphere of reconnaissances is limited; little or no cavalry can be used, and consequently it is difficult to observe the enemy.

"Mountains, in general, offer to weak detachments the advantage of strong defensive positions, which generally can not be attacked upon the flanks nor turned, without great loss of time.

"Finally, in a mountainous section, the belligerents can bring only a limited number of effectives into action. It does not, then, in wars of great magnitude, offer a favorable field for decisive operations."*

Hilly Regions.—All this is not entirely true of regions that are simply hilly. We may even go so far as to observe that the difficulties which these formerly presented to the movements of armies, have, in our time, very much diminished. The means of communication have multiplied; cultivation has become more extended; and the forests have been thinned out or entirely destroyed. As a result, these regions are more accessible, and their defiles less favorable for defense.

This is apparent in France in the hill sections of Ardennes and Argonne.

The other important natural obstacles which theatres of operations possess, are woods, forests, lakes, ponds, deserts, and sea-coasts. It would be too long a task to set forth the importance of each of these from a military standpoint. Moreover, it will always be easy in a re-

* Blume. *Strategy.*

connaissance, to discern the natural peculiarities of a theatre of war which connect themselves with the plans of the commander-in-chief, and to find out the advantages or inconveniences which they offer in conducting operations.

Woody Regions.—It may, however, be useful to consider the part played by woody regions in warfare. In general, they strengthen lines of defense or cover the concentration of troops.

Thus in 1792, the forest of Argonne increased the value of the defensive line held by Dumouriez. It extended parallel to the Meuse, from Sedan to Passavant, and consequently cut the enemy's line of operations. An army could then traverse it only by five passages, all of them constituting dangerous defiles—the Chêne-Populeux, the Croix-au-Bois, the Grand-Pré, the Chalade, and the Islettes.

It was the same in 1870. These defiles had still, no doubt, a certain defensive strength for troops energetically commanded. But at this period, the mass of the enemy's armies already outflanked the forest of Argonne to the south, when the Army of Châlons arrived there, marching toward the north-east. The latter was partly disorganized, and instead of being ordered to defend these passes, it had no instructions except to gain the Meuse as rapidly as possible, then the Moselle, and finally Metz.

In the same year, the forests covering the right bank of the Sarre favored the concentration of the I. and II. German Armies. The reconnaissances made by our cavalry were then very limited, and lacked the boldness properly belonging to this arm; so that the woods could be used by the enemy as a screen, permitting him to advance undiscovered by us, even up to the approaches to our territory.

Likewise, in November, the forest of Marchenoir served to veil the concentration of the Army of the Loire. It cannot then be doubted that strategy should at times take forests into account in its combinations.

From a tactical point of view, woods have the advantage of effectually protecting infantry against the enemy's projectiles. Therefore, in a period when, more than ever, the combatants are interested in securing cover and in concealing their movements, woods will undoubtedly be utilized to their fullest extent whenever possible. This fact was made clear in 1866 and 1870. Nevertheless, woods are an obstacle to the effective employment of artillery and cavalry. To infantry, however, they afford shelter favorable either for holding a position or for marking a first advance and giving opportunity to prepare a second. But they interfere with unity of action, and do not readily permit a decisive effort.

It is not less true that, occupied in force, they often present points of support difficult to carry. From every standpoint, then, the consideration of the offensive and defensive qualities of woods ought in no case to be omitted in the preliminary reconnaissances of theatres of war.

Among the natural accidents presented in a field of operations, *military positions* call for special attention.

Military Positions.—All regions in which armies may be called upon to operate, offer more or less advantageous military positions. The offensive need concern itself but little with these, except when it foresees a battle in a particular region. It is then necessary to know the means of reaching and seizing such positions. But, in general, this will be an indispensable preliminary study for the defensive. In this case, it will be essential to estimate, exactly, the forces necessary for an energetic

defense; and if the position is too extended to be properly occupied by the forces in hand, it will often be necessary to relinquish it.

In 1870, the position of Frœschwiller [Woerth], though studied in advance, was occupied by the troops of Marshal MacMahon under disadvantageous circumstances. Its defense against so superior an enemy required a much larger effective. The result was that only two companies of infantry were available to defend our right at *Morsbronn*, and the XI. Prussian Corps succeeded at this point in outflanking our position.

In a study of a theatre of operations, we shall henceforth, more than in the past, be led to examine and select defensive positions. These studies are especially important for armies that can not hope to take the initiative at the outset.

It was this thought which, in 1868, led General Frossard to choose the two positions of Frœschwiller and Cadenbronn in Alsace and Lorraine.

It was in the same connection that, before the war of 1870, the commander-in-chief of the 3d Corps at Nancy, selected a military position upon the left bank of the Moselle. The forest of Haye, west of this city, covered in all directions by the Meurthe and the Moselle, situated upon a plateau which commanded their valleys and the approaches, appeared to him to unite all conditions desirable for sustaining an obstinate conflict with superior numbers. But events did not permit our occupation of this position.

In a new war with Germany, a good selection of defensive positions would be of decisive importance to the French army, should its adversary's concentration be completed first. Should the contrary be the case, however, such study would be of little use, for then the offensive alone would be suited to the situation.

In the Turco-Russian war we witnessed the great ce-

lebrity gained by Plevna through the obstinacy of its defense. It had not, however, been recognized in advance, and did not possess peculiar qualities as a strong position. Hence the combats of which it was the theatre show especially the use which determined troops, energetically commanded, can make of chance positions. Now if it is possible, with modern arms, to give to a few inflections of the soil, taken at random, a defensive value considerable enough to arrest a victorious army, what may be looked for when a position is fixed upon in time of peace and defensively organized?

This topic then offers ample material for grand-tactical studies. It will be proper to refer to it again when the regular development of the subject conducts us to it.

Whatever may be the obstacles encountered upon the theatre of war, it is important to recognize this truth: they more especially interest tactics, and seldom influence the combinations of the general-in-chief.

In 1805, 1806, and 1809, as in all his campaigns, Napoleon, in preparing his marches, had in view only the enemy's principal mass, the point of attack, and the means of obtaining decisive results. When he came to the execution of his projects, he took into consideration the facilities and impediments which the character of the ground presented; he gave these matters attention in his concentrations, in the direction given his columns, in the choice of a field of battle, and on the eve of engagements, but this was all. The end to be attained, the total destruction of the enemy, remained none the less his dominating thought.

The study of a theatre of operations should then be made especially from a tactical point of view.

Strategy remains independent of the character of the ground, which has for it only a relative importance. This view is also that of the German staff.*

* Blume, *Strategy*.

III.—Artificial Obstacles.

The principal obstacles created by the hand of man upon the theatres of war, are cities and fortifications. Their influence upon the operations requires no demonstration.

Cities.—Populous and industrial cities are always, so far as the support of large armies is concerned, centres of resources. Their possession furnishes necessary supply stations, and depots for troops; and they are convenient links in the communications, serving to assure freedom of transportation. They therefore give evident and positive advantages to the belligerent controlling them.

In these various aspects, large cities become strategic points with which it is essential to be acquainted in advance. They are always liable to become objectives during the course of a war: it is essential then to consider them in this connection before the opening of hostilities.

In a conflict between Germany and France, Nancy, Rheims, Paris, and Orleans would be points of the utmost importance for our adversaries, who would then derive incalculable benefit from a previous study of these places during peace.

The large cities of the Rhine, the junction points of the great railroads leading from this river toward the Elbe, would have a like interest for us.

Fortifications.—These considerations apply with much greater force to fortified towns and positions.

In recent years, the defensive systems of the different states have been transformed in consequence of the improvements in artillery. Intrenched camps have super-

seded the former places with bastioned *enceintes*, lunettes, and citadels. Upon the presumed lines of invasion, *forts d' arrêt* have taken the places of batteries and small forts.

To a special degree, countries like France, which are exposed to sudden aggressions or menaced by perpetual enmities, have been obliged to cover themselves by fortified works and intrenched camps.

Armies can no longer invade a country without taking into account these powerful obstacles, which command the lines of communication, and whose sphere of action extends over a vast area. If the German armies were to enter our territory again, they would be compelled to submit to this law, and would no doubt endeavor to invest the intrenched camps of Verdun, Toul, Belfort, Epinal, and Langres. For this, masses of more than 100,000 men would be required. Our enemy's forces would thus be divided, and determined troops who had carefully avoided immuring themselves in these places, might perhaps seize favorable opportunities for taking the offensive, and give battle under advantageous conditions. Yet it is not probable that these places could stay the invader. He would still have forces sufficient to act as in 1870. He would no doubt invest our fortresses by troops of the 2d line, and push forward those of the 1st line, hoping for decisive success in the open country. Such also is the system of operations which should be adopted by all great modern armies. Fortified places should be masked, while the main operations are pursued. But it is not the less useful to carefully study in advance these artificial defensive positions, which have everywhere undergone a signal transformation, rendered necessary by recent developments in the military art. The character of the new fortifications erected by all nations, obliges each to endeavor in time of peace to become acquainted with the strength, area

controlled by, and even construction of, the defensive works of its neighbors.

Defensive Organization of Frontiers.—The first aim of the fortifications of a country is to prevent access of the enemy to its railroads and ordinary roads; the second to offer to armies charged with the defence, points of support that may be utilized for offensive as well as defensive operations.

First of all, then, it is essential to seek control of the great lines of invasion, which usually correspond to the principal railroads; then the railroads entering the national territory in secondary, and, consequently, less dangerous directions; the ordinary roads in hilly sections; the defiles, necks, and passes situated upon the frontier, which might enable the enemy to turn certain defensive positions; and, finally, in the interior of the country, the important railroad junctions, the defiles traversed by the principal railway lines, etc.

Three Kinds of Frontier Places.—We should have, then, three kinds of frontier works: *intrenched camps* or fortresses of the first class, upon the most important positions; intermediate defences, sometimes forming small intrenched camps, in secondary positions; *forts d'arrêt*, to close special passages.

Almost all nations have to-day applied this system to their defensive organization. We may then confidently expect to see operations at the outset of a campaign influenced by the situation, strength, and number of the fortified places covering the frontier zones.

In this regard, we have a peculiar interest in knowing exactly the opinions current in Germany upon the subject of fortified places in general, and especially upon the defensive system of France and the means of attacking or masking it.

According to Prussian theories, fortified places should fulfil certain strategic conditions. They should protect important cities, supply-depots, or depots for troops; should defend communicating roads or important passes; should serve as points of support for either defensive or offensive operations, and as a refuge from pursuit; or finally, should assist in covering an army's lines of retreat.

"Who at the present day can presume to disregard the importance of a system of fortifications judiciously planned for the country's defence? Well employed, it can give the most effective and varied support to troops in the field.

"If, in the case of a defensive war, we could, without a notable diminution in the number and value of field forces, or in the energy of their operations, fortify all the cities in the theatre of war, exclude the enemy, by our works, from all means of communication, while reserving to ourselves the possibility of using them, we should attain the greatest possible security against attack.

"It is seen, then, that fortresses withdraw immense numbers from service in the field, and so disperse them throughout the territory that but a fraction of them can take part in active operations. This portion, it is true, will often render more effective service by basing its operations upon these fortresses than by joining the ranks of the active field force. This is why we favor a limited number of judiciously placed fortresses. But it should never be lost from view that great and decisive results are obtained in the open field alone; and that while each of the established fortifications can be of service only in the cases specified, it is the movable troops that secure the victory, whatever may be the events, or wherever the theatre of operations."*

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*Blume. *Strategy.*

Von der Goltz says on the same subject:

"We have alluded to the new fortifications constructed in France. During the last ten years, the eastern frontier has been covered with a net-work, nay, a breast-plate of forts and fortified places, presenting but few gaps, and the presence of these easily explained by military considerations. The French have almost solved the problem of barring all the roads by which an enemy coming from the east or the north-east might attempt to enter the country.

"A war between France and Germany would begin then by a series of struggles around fortified places. The girdle of frontier fortifications once broken, the defender would find a new support in a second series of intrenched camps, which would offer a new impediment to the movements of the assailant. The latter's line of communication could pass through only at the single point where this circle of forts had been broken; and the importance of this consideration increases in reflecting that the army, advancing slowly, will find it most difficult to live upon the country. In the report made by General Rivière to the Chambers, concerning the plan of frontier fortifications, he declared that their aim was to compel the Germans in the next war to follow a fixed, well-defined direction. It is then recognized in France, not only that the chief superiority of the Germans lay in the dispatch with which they carried on war, but that the French would find it difficult to quickly enough rival them in this, the essential condition being to have no leaders except those schooled in this system.

"How may this newly-created obstacle be overcome?

"In the absence of experience, the most contrary opinions will continue to be expressed. One urges that we hold ourselves upon the defensive along the Rhine, to avoid this bristling collar of forts. Another would make

a determined assault; that is to say, he follows the example of a deliberative assembly when, in the discussion of a bill, it holds back a perplexing clause. A third proposes to slip between the forts, and to turn over the matter of their capture to the reserves when they come up, putting aside the question in this simple fashion. A fourth thinks that a short siege would be sufficient; a fifth, that it would be absolutely necessary to resort to methodical sieges.

"As a consequence, in a future war, even if our armies should be led with as much circumspection, and should be as brave as has been the rule up to the present, we shall be obliged to admit that we cannot count upon such startling rapidity of operations, or upon results as brilliant and as swift, as those of 1866 and 1870. After the battle of Lowositz, Frederick wrote to Field-Marshal Schwerin: 'These are no longer the Austrians of last year.' And we, at the beginning of the next struggle, shall be obliged to make this confession: These are no longer our enemies of former years. *In order not to enter the next war with false ideas, it is imperative that we keep this in view. We shall certainly be disabused of them. And this will have the effect of shaking the confidence which the troops have in their leaders, notwithstanding that the slower march of events is the outgrowth of natural causes. The difficulties, in the future, will be greater, in any case, and the advantage, at the beginning, very much less.*"*

The extraordinary development of our frontier fortifications, has, as we see, impressed the other powers. All have not understood it however; and even among ourselves, more than one discerning mind has asked himself this question: *Of what use?*

The reply is very simple. The independence of

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* Von der Goltz, *The Nation in Arms.*

France, nay, her very existence, was for a time threatened. Before she had restored her army, she wished, in the first place, in case of a sudden aggression, to have shelter for her young troops.

Later, when her forces had been reorganized, to make it manifest that she had no intention of attacking her neighbors, she completed her defensive system. But when the inveterate hatreds, of which she has always been the object, are again let loose, she intends to make war in her own way, in the manner which shall appear the most advantageous, which the best corresponds to actual circumstances, and which will assure her the most beneficial results.

Confident of shattering the efforts of the enemy's masses, she will choose the points most favorable for striking decisive blows, and will thus be certain that no assailant can dictate to her the course of operations.

However, we should never forget the practical advice given on this subject by a Prussian field-officer.

"It is necessary to guard against too great a confidence in the efficacy of fortifications for the protection of the country—against the preference given the shield to the detriment of the sword.

"An excessive tendency to employ fortifications has its origin, consciously or unconsciously, in a feeling of moral weakness.

"Fortresses are of service only in a war against a superior enemy. But the weaker may be morally strong, and in this case only will it make a judicious use of fortifications. They are, on the contrary, dangerous for the side which is morally weak. For such a nation, they have an irresistible attraction, and involve it in their fall.

"Persuade a people that the centre of gravity of the country's defence is to be found behind the ramparts of its fortresses, and long before the necessity arises, you will

see the army recruited from this people fleeing to these defences.

"And if there is not then found behind these walls the anticipated security,—if, as has already often been seen, the improvements in the technical branch of the military art give the adversary the means of sweeping away, in a manner as rapid as it is unexpected, the protection which the walls and ramparts were designed to afford,—the fate of that country will soon be decided."*

Following the same ideas, Napoleon said:

"The most abundant means, if scattered, can produce no result. With artillery, cavalry, infantry, fortified places, and throughout the entire military system, this principle is invariable.

"It is upon the open field of battle that the fate of fortresses and of empires is decided."†

IV.—Limits of Theatres of Operations.

The boundaries of theatres of operations have acquired, in modern times, notably in case of France, an importance which must not be overlooked. We know, indeed, that success in the field is most frequently attained by a turning movement, threatening the adversary's communications. This effect is produced by a strategic manœuvre, which to-day requires so wide a stretch of territory, that in a group of combined armies, one entire army is ordinarily charged with its execution. If this space is contracted, it assures the defensive exemption from the dangers of such a movement.

On the other hand, the army on the offensive has the more interest in throwing back the enemy toward the limits of the field of operations in proportion as these

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* Blume, *Strategy.*

† *Military Correspondence of Napoleon I.* (2d September, 1809.)

are narrow or impracticable. Nothing, indeed, is more advantageous for the prompt termination of operations than to drive the enemy into a position from which escape is impossible.

Impassable Boundaries.—Impassable boundaries of theatres of war are formed by sea-coasts, the banks of large rivers, high mountain chains, or the frontiers of neutral states.

Frontiers of Neutral States.—Our territory is bounded on the north, east, and south by neutral states; from which fact our adversaries were able, in 1870, to draw considerable advantage, by driving two of our armies to our frontiers. This is a consideration which should be the less lost sight of, because since that time neighboring countries, unconsciously inflamed by outside influences, seem to entertain the idea that France, and France alone, is disposed, when at war, to violate their neutrality.

The consequence is a marked tendency to defensively organize the frontiers of these countries against us. Now, this being the case, the dangers of being driven upon them would be to-day still more serious for our armies, and more profitable for our adversaries. Our position would indeed be more critical, and the results of defeat more decisive for the victors.

In every sense, says Colonel Blume, the throwing back of an enemy upon a neutral territory has a double advantage; first, his army is as thoroughly destroyed as if captured; and again, the burden of maintaining it falls upon another people.

The boundaries of a theatre of operations should then be studied in advance with minute care, in view of probable operations in the future, and in order to be prepared for all emergencies.

We must conclude from the preceding, that it is indis-

pensable to take into consideration, in time of peace, the different theatres of operations upon which an army or groups of armies may be called to act. The principal points upon which these studies should bear, have been placed in relief. The practical result should be to bring together, in regular order, such facts, in this connection, as shall permit the general staff to establish its plan of campaign in seasonable time.

V.—Statistical Resources.

The study of the configuration of a theatre of operations would not be complete without including an examination of the statistics of its resources.

It is these, indeed, which enable the chiefs-of-staff to properly provision and canton their armies.

There are certain statistics a knowledge of which is indispensable in preparing for war; namely, those relating to the enemy's forces.

At the commencement of the century, the only means of obtaining this information was to have it gathered upon the spot by official or secret agents.

To-day, on account of the facility of communication and the wide extension of the means of publicity, it is easy, with a well-organized service, supplemented by foreign travel, to be kept constantly acquainted, not only with the military resources of a people, but also with the spirit, organization and distribution of its army.

Prussia gave the first example in this regard, pushing her preparations to limits as nearly complete as possible.

The general staff at Berlin contains three sections specially charged with attentively following all military movements both at home and abroad, for the purpose of keeping themselves informed concerning everything touching organization, recruitment, armament, equipment, the geographical configuration of neighboring

countries, the construction and demolition of fortresses, the development of ordinary roads, railroads, canals, etc.

The countries of Europe are distributed among these three sections, and form subjects of special study. Each section has a chief, assisted by staff officers severally charged with the consideration of special features of this work.

This organization has been adopted by all armies since the success of Pruisia demonstrated its utility.

France, in a timid way, followed this example in 1868 and 1869, and in a more thorough manner since 1871.

§2. STRATEGIC VALUE OF THEATRES OF OPERATIONS.

The establishment of a *projet* of operations requires not only previous knowledge of the various accidents of ground within the theatre of war, but also exact notions of the military importance of each.

Viewed in this connection, these accidents constitute strategic points and lines.

I.—Strategic Points.—Objectives.

Strategic points are those positions in the theatre of operations the possession of which augments an army's power for action.

The number of such points is always considerable, and their importance, although varying with conditions of time and place, warrants us in defining and classifying them.

For armies, they form objectives.

Objectives.—It is upon the choice of objectives that the lines of operations depend.

Before the wars of the First Empire, and even afterwards, theorists distinguished objectives as principal, secondary, contingent, etc., and made their possession

the army's first aim, in consequence dictating to it the line of march.

Many military men still defend this principle; yet, judged by the light of former wars and those of to-day, it does not accord with facts.

In 1866, for example, the Prussian armies entering Bohemia, refrained from marching upon Prague and thence upon Vienna. They took the army of Benedek for their objective. After having beaten it, they pursued its remnants towards Olmütz, and directed themselves upon the new army which was assembling at Vienna.

In 1870, the I. and II. German Armies had for their first objective the French army on the Sarre; then our main forces assembled around Metz. Paris became the aim of their march only after the battles of August 14, 16, and 18. This objective was, morever, at once abandoned when Von Moltke was apprised of the presence of a new army upon his right flank.

But it is especially the operations of the III. Army which point out with precision the rules to be followed in the choice of objectives at the commencement of hostilities.

On the 30th of July, 1870, the German armies were nearly ready to act. Their leaders had anticipated an offensive on our part, but upon discovering our inaction, were not slow in comprehending our tardy concentration.

It was consequently resolved at the German general headquarters, to at once take the offensive in Alsace; and the objective of the first movements was indicated to the Crown Prince as follows;

"July 30, 9 o'clock, P. M.

"His Majesty considers it expedient that as soon as the III. Army is reinforced by the Baden and Würtemberg divisions, it should advance toward the south

by the left bank of the Rhine *to seek and attack the enemy.*

"In this way the construction of bridges to the South of Lauterburg will be prevented, and the whole of South Germany protected in the most effective manner.

"VON MOLTKE."

We may from this conclude: *The principal army of the enemy ought always to be the first strategic objective.*

The Russians, in 1877, thought proper to violate this principle. Urged by political considerations, they decided, after the passage of the Danube, to neglect a Turkish army of 100,000 men on their left at Rasgrad, and another mass of about 40,000 men holding the valley of the Vid on their right, and to take Adrianople for their first objective, marching straight upon it.

This was a mistake, and they were on the point of paying dear for it.

The resistance organized by Osman Pacha upon the flank of their line of operations arrested their progress, subjected them to numerous checks, and forced them into several unanticipated engagements. Plevna, which was almost devoid of strategic significance at the beginning of the campaign, soon, through the energy displayed by the Turkish general, acquired signal importance, and thus became a decisive objective.

In studying contemporaneous wars more in detail, we shall see that the objectives chosen at the commencement of operations by successful invading armies, have always been, first, the enemy's principal masses, then the principal railroad centres and the fortified places assuring free use of communicating ways, and, finally, the capital of the country.

Marshal Bugeaud had occasion, in 1845, to express his ideas upon this subject.

After the affairs at Sidi-Brahim and Aïn-Temouchent,

a wide-spread insurrection broke out. General Lamoricière, commanding in the absence of the marshal, hesitated concerning the aim of the expedition about to be undertaken.

The marshal wrote to him:

"Find out where Abd-el-Kadir is with the bulk of his forces; concentrate your own, and march straight upon him. In destroying these forces, you will strike the other insurgents with the same blow, and will at once see all opposition die out."*

This rule, so precise, so clearly affirmed by the most celebrated warriors, is not, however, without exceptions.

In 1814, the allied armies of Bohemia and Silesia had taken Paris for their objective. At the moment when Napoleon, abandoning the direct defence of his capital, turned upon their communications, they contented themselves with placing an army corps in his front, and continued their march.

Their generals chose to neglect the enemy's main forces, taking for their objective the principal strategic point in the theatre of operations.

In the case before us, their determination was not an error.

They knew indeed that their adversary's forces were very weak; moreover, an intercepted letter had apprised them that he himself doubted the success of his operation; and, finally, they were quite certain that once the capital fell into their hands, they could bring about his dethronement.

The march upon Paris assured them, then, a result more in conformity with the aim of the war, more prompt and more decisive, than could be obtained by a continuance of the struggle with Napoleon in the field;

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* General Pierron.

for, in taking away his crown, they deprived him of his last resources.*

This exception is not the only one given us by recent military history.

In 1849, Hungary, engaged in insurrection, appointed Görgei, formerly a captain, to the position of commander-in-chief. After a three months' campaign, he succeeded in driving back the Austrian army commanded by Prince Windischgraetz from the Theiss to the Danube. The imperial forces, wishing to oppose the passage of this river, took position, on the 5th of April, beyond Pesth. Görgei made a demonstration towards Foldwar, then slipping away under cover of the 2d Corps (Aulich) and the Knety Division, left in observation before Pesth, marched upon Comorn by the left bank, for the purpose of debouching upon the Austrian rear. (*See Plate IV.*)

On the 10th of April, he took Waitzen; on the 18th, arrived at Leva, forced the passage of the Grau at Nagy-Sarlo, and succeeded in raising the siege of Comorn on the 22d.

The Austrians, seeing their line of retreat threatened, fell back upon Presburg. At the same time their armies in Italy were driven within the Quadrilateral. Their continued reverses decided them to accept the assistance of the Russians, who entered Hungary, June 17, by way of Dukla.

General Hainau, who had superseded Windischgraetz, was obliged to choose, first of all, an objective favoring co-operation with his new allies.

Should he, according to recognized principles, form a junction with the Russian army at once, and then move with it against Görgei? To do this would be to uncover Vienna, which had already been on the point of falling into the hands of the insurgents.

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* General Pierron.

Under the pressure of circumstances, not being able to act thus, he resolved to operate by the right bank of the Danube, and take Buda-Pesth, the capital of Hungary, for his objective, instead of the enemy's army.

This resolution has been justified as follows by Ramming:

"The first objective of the operations was Buda-Pesth; for this was the seat of the provisional government, the centre of the revolutionary intrigues of the country, and, after Comorn, the most important strategic point in the western part of the theatre of operations. All the communications of the country center here, and it is, with exception of Comorn, the only permanent point of passage of the Danube.

"In marching upon this place, the Austrians assured the possession of the territory comprised between the Danube, the frontier of Styria, the Drave, and the Muhr. They could thus at any time form a junction with the Russians by way of Foldwar and the line of the Franzens Canal. They thus shut up the enemy between the Danube and the Theiss, in a country without defensive positions.

"From Presburg, Hainau had two lines of operations leading to his objective: one upon the left bank, through Freistadt, Neutra, and Waitzen, to Pesth; the other upon the right bank, leading to Buda by way of Raab.

"Upon the first line, the road beyond the Waag was assured by the bridge-heads of Freistadt and Szered; but on this side, the enemy could take up good positions, supporting his left on Comorn. In addition, he held the interior line, and could reach Buda-Pesth before the Austrians. This first line, moreover, was longer than that by Raab; and, finally, it left to the enemy, who possessed the passages of the river of this name, the means of reaching Vienna in six marches, either by this town, Wieselburg, and Brück, or by Œdenburg and Viener-

Neustadt, while preserving his line of retreat upon Comorn.

"With the second line, the situation was quite otherwise. From the outset, the Austrian army occupied the important point Raab; it thus protected its left wing by the river, remained in direct communication with the fortified passage at Presburg, kept the enemy beyond Comorn by defensively organizing the passages at Freistadt and Szered upon the Waag, obliged him to besiege Presburg if he wished to take the road to Vienna, and finally continued master of the shortest road to Buda-Pesth. This latter circumstance, joined to the menace of an attack by the Russians, sufficed perhaps to determine the retreat of the enemy."*

The two cases just cited prove, indeed, that under certain circumstances, the first objective of an army may very properly be something else than the enemy's principal force; but it is quite as evident that such cases are exceptional, and that they do not invalidate the rule.

Railroad Centres.—Without seeking to classify objectives in advance, according to their degree of importance, it is proper to note that, for modern armies, the possession of large railroad centres is an object which first and foremost forces itself upon the attention. Independent of the principal centres, the branch and junction points have also an importance of the first order.

These considerations have, to-day, led all the powers to construct regular fortresses around cities commanding the principal railway lines, and *forts d'arrêt* upon branch lines, at least in frontier zones.

In 1870, the German armies thus made their movements toward the points occupied by our armies, and then moved upon the cities, the control of which assured their communications.

Finally, the capitals, especially in nations so central-

*General Pierron.

ized as ours, always constitute decisive objectives for a victorious host.

It would thus be easy to determine in advance the points in a theatre of operations likely to become objectives for an offensive army.

From the foregoing, we may deduce the following rules governing the choice of objectives:

1st. Generally, the *first objective will be the principal army of the enemy;*

2d. The importance of the strategic points of a theatre of operations is indicated by the positions of the armies;

3d. The occupation of these strategic points is effected in the order indicated by the aim of the war;

4th. After the enemy's principal army, the most important objectives are, ordinarily, large railroad centres, fortified places, points of junction in lines of communication, and, finally, the capital.

There are, however, circumstances in which the occupation of the capital of a country brings little advantage. Witness that of Madrid in 1808, and of Moscow in 1812. But such instances are exceptional.

II.—Strategic Lines.

These embrace all the various lines which are of service to an army in the field, such as lines of operations, bases, etc. It will be sufficient here to study only the lines of greatest importance.

Let us at first consider those from which armies begin their movements, the *bases of operations.*

1st. *Bases of Operations.*—In the opinion of a great many military men, bases no longer exist; railroads have supplanted them. This view is incorrect. In default of other proof, it would be sufficient to quote portions of the memoir prepared, in 1868, by Marshal Von Moltke, relative to a choice of bases in a war against France. The true state of the case is that the changes

which have taken place in our time have modified, but not abolished, bases of operations.

To-day, as formerly, before commencing active operations, an army is obliged to collect supplies at points in its immediate rear, and from these the troops are to be fed during the first marches, and to them will be sent back the disabled men and unserviceable material.

These points will necessarily be chosen upon the lines of communications, consequently, at stations upon the important railway lines. They should always, if possible, be in rear of a defensive line.

They will form *a line of centres regulating the movement of the armies.*

In 1870, aside from the available resources of the various corps regions, the German army had, at the end of July, six weeks' provisions collected in the principal places along the Rhine. This river was then, at least in appearance, its base of operations.

But, in reality, these centres of supply had no influence upon its operations, except as intermediate magazines between the corps and their home regions. They did not constitute *a base of operations.*

In railroad military service, by base of operations is understood *the line of places at which the various parts of an army are detrained.*

Again, when an army takes the offensive, this base changes name, and becomes *the line of temporary stations.* This line, as the name indicates, shifts as the army advances. It forms, then, a new contingent base.

On the defensive, the base is otherwise constituted as regards transports. Each army should have a line of central railway stations where will be gathered the principal supplies sent to the corps from their regional depots. This line is looked upon as the base. On the defensive, in reality, the base will be everywhere, and the lines of communication may be changed according to the exigencies of the situation.

For railroad service, there exist then, to-day, *principal bases*, which are the centres of supply, and *contingent bases*, which vary in position with the progressive events of the war. The latter are the intermediate points at which supplies are brought together.

Indeed, both classes mentioned are bases of transportation, or better still, lines of military magazines, and nothing more. To demonstrate this, it is sufficient to recall the rôle which these magazine-stations played in 1870.

Supply Centres of the German Armies in 1870.—At the end of July, 1870, the Germans had collected six weeks' supplies for 7 corps at Cologne, Coblenz, Bingen, Mayence, Hausen near Frankfort, and Mannheim. Some days later, the supplies at Cologne and Wesel were transported to Bingen, and so brought closer to the points where the troops were assembled. At the same time magazine-depots were formed at Heidelberg and Meckesheim, for the grand-duchy of Baden; at Germersheim, Ludwigshafen, and Neustadt, for Bavaria; and at Bruchsal for Würtemberg. All these places were either principal or branch-point stations on railroads leading to the Rhine.

Foreseeing the difficulties of providing for the troops during their transportation to the frontier, the commissary service had, in addition, accumulated six weeks' supplies in each corps region. A portion of these was carried by the troops to the zone of concentration. And up to the day when the railroads were available for the transportation of provisions, the armies were fed from these supplies, those found in the cantonments, and especially those brought together in the cities of the Rhine.

Even by making the most of the local resources, the German commissary department recognized the fact that the Rhenish provinces, notwithstanding their fruitfulness, would be able to furnish but two days' provisions to the troops assembled in the zone of concentration.

During the first days of August, when the German armies had become assured of our defensive attitude, the dispositions made with reference to their supply-centres were modified.

The I. Army established temporary depots at Fraulautern and Treves, in rear of its right flank.

The II. did the same, locating them on the left bank of the Rhine at Kreuznach, Alzey, and Worms.

The III. made no changes in the measures previously adopted.

After the battle of Sedan and the surrender of Metz, the Germans established their principal provision stations at Pont-à-Mousson, Nancy, and Lunéville.

Later, when the operations were being carried on around Paris, in the North, in the basins of the Loire, and the Haute-Saône, the German line of temporary stations was developed by way of Chantilly (line from Paris to Amiens);

Soissons (line from Paris to Laon);

Reims (junction of lines to North, East, and Southeast);

Chalons (line from Paris to Strasburg);

Blesme (branch of preceding line connecting with lines of the Southeast);

And, finally, Chaumont in Bassigny (junction point of principal lines of the East).

These railroad stations taken together represented an accidental line of magazines placed upon the supply-routes of the armies, and regulated the transport movements according to the needs of the different forces. They were then true supply-centres, or, according to the expression officially sanctioned in France to-day, *stations de transiton.* But strategically it would be incorrect to call those lines bases of operations.

From another standpoint, if we leave out of view these supply centres, and take into consideration the in-

fluence of the *zones of concentration* upon the operations, we perceive that it is the *frontier zones by which the armies communicate with their country, which to-day constitute true bases of operations.*

Bases of Operations of the German Armies in 1870.—Let us take for example the war of 1870–1871. Before the commencement of hostilities, there were several combinations open to our army. It could in the first place take the offensive by the line of the Meuse and debouch upon Cologne. In this case, as indicated in the memoir written in 1868 by Marshal von Moltke, the German armies would have concentrated upon the Moselle, to the south of our line of operations, threatening our right flank and our communications. They would thus have forced us to stand for battle faced to the south, in a disadvantageous position.

According to the same project of the Marshal, the Rhenish provinces and the Moselle were to serve him as a base of operations.

Again, our army might penetrate Germany by violating the neutrality of Switzerland. But this operation was regarded by the Germans as presenting too many dangers.

We had remaining for a zone of concentration only the region between Metz and Strasburg. There our first object would be to reach Germany by the valley of the Main, for the purpose of separating the States of the South from those of the North. In his memoir, the Marshal concluded that we would then effect an arrangement with the first mentioned states, and taking them for a new base, advance toward the Elbe.

In this case, the Germans might have concentrated upon the right bank of the Rhine. However, as it was more advantageous to menace our left flank and our communications, they would have adopted as the *zone of concentration*, the Bavarian Palatinate, which extends

to the south-east of the lower Moselle. This latter was the plan actually adopted.

It was, then, the region comprised between Treves and Landau which became the *base of operations* of the German armies.

Once there, by reason of our defensive attitude, their first strategic objectives and their lines of operation defined themselves.

Our principal masses in Alsace and Lorraine constituted the objectives, and the numerous roads which, on each side of the Vosges, converged upon Metz and Strasburg,—centres of union of these masses,—formed necessarily the lines of operations.

Definition of Bases.—We may then conclude that the *base of operations* of an army is the frontier zone *upon which* its corps concentrate *before beginning active operations.*

From the example offered us in the commencement of the campaign of 1870, it is seen that the chief modifications in bases have been in the location of magazines, depots, hospitals, etc. These are upon the principal railroads in rear of the base.

It is then no longer necessary to leave reserves upon this base for its protection, but it is quite as important as formerly to have fortified places which guarantee possession of the railroads connecting the base with the country itself.

France, in 1870, had for its base of operations the Metz-Strasburg zone, but it was an offensive base, established in anticipation of events whose course was arrested by the first engagements.

The mistake was made of establishing the first supplies upon this base, instead of placing them upon the railroads in the rear. These supplies consequently fell into the hands of the enemy, when one of the points supporting the base was taken from us and we were reduced to the defensive.

From this time, the whole of France became our base of operations. But this designation applied more properly to the region connecting our forces with the Centre and the South, that is the Orleans-Langres zone, which should have been the theatre of a strong defensive organization, and where a stubborn resistance should have been made. Unfortunately the importance of this section was understood only after the Germans had possession of it.

Another element upon which the influence of the base depends, is its direction with reference to the adversary's lines of operations.

Direction of Bases of Operations.—This direction may be either perpendicular or oblique to these lines, or, indeed, at once perpendicular and oblique.

Perpendicular to the enemy's lines of operations, it gives rise to combats upon the front without immediate menace to the communications.

Oblique, it endangers the enemy's flank, and places him at once in an unfavorable position. Oblique and perpendicular at the same time, it will permit combined and converging movements, the execution of which exposes the enemy to critical situations.

The most advantageous bases of operations will be, then, those which, while covering an army's communications, the most directly threaten those of the adversary; that is to say, right-angular bases.

Napoleon's Base in 1805.—In this year, the Emperor had a base of operations upon the Rhine, menacing the front of the Austrians, and one upon the Main, almost parallel to their lines of operations, and threatening their rear. The capitulation at Ulm was the result.

In 1806, he had an apparent base upon the Rhine, extending from Mayence to Strasburg. Therefore, when

the Prussians were informed of the great concentrations which he was effecting in the valley of the Main, their first plan was to march upon Mayence by way of Frankfort, to separate him from his base.

In reality, in consequence of his alliance with the States of the South, Napoleon had chosen a base oblique to the preceding, and also to that adopted by the Prussians to the north of the Thuringian Forest. It extended from Würzburg to Kronach, by way of Bamberg. He then massed his forces upon the extremity of his base at Coburg, Kronach and Bayreuth, which he temporarily fortified; whence debouching rapidly upon Saalfeld, Saalburg and Hof, he overlapped the left of the Prussian army and threatened its communications. (*See Plate V.*)

The brilliant result of this combination is well known. It is needless to dwell upon it here. But in considering the selection of bases and the importance of their direction, it is interesting to see how clearly this result had been foreseen by Napoleon and explained by him before the campaign:

"Statement of the Plan of Operations which the Emperor expects to follow.

"Instructions

"*To the King of Holland.*

"MAYENCE, September 30, 1806.

"I dispatch to you M. de Turenne, who is an orderly officer near my person. He will place in your hand this letter, which is designed to acquaint you with the plan of operations that I propose to follow. It is probable that hostilities will commence on October 6."

First Observation.—"It is my intention to concentrate all my forces upon my extreme right, leaving the whole space between the Rhine and Bamberg entirely unguarded, so as to have about 200,000 men in

hand upon the same field of battle. If the enemy pushes some of his forces between Mayence and Bamberg, I shall be but little concerned, because my line of communication will be established upon Forchheim, a small fortified place, and thence upon Würzburg. The course of events cannot be definitely predicted, because the enemy, who supposes my left to be upon the Rhine, and my right in Bohemia, and who further believes my line of operations parallel to my front of battle, may attempt to turn my left; in which case, however, I can throw him upon the Rhine."

Second Observation.—"My first marches menace the heart of the Prussian monarchy, and the deployment of my forces will be so imposing and so rapid, that it is probable that the whole Prussian army of Westphalia will fall back upon Magdeburg, and that all the troops of the enemy will hasten by forced marches to the defense of the capital."

Campaign of 1800.—The campaign of 1800 furnishes us a still more remarkable example of the choice of bases, and the consequences of their advantageous direction.

Bonaparte, then First Consul, was to oppose the Austrians both upon the Rhine and the Alps, from Mayence to Genoa. Grasping the importance of the Danube as a principal line of operations, he wished to mass a force of 180,000 men upon the Rhine and one of 40,000 upon the Alps. His plan depended upon the advantages to be derived: 1st. From the occupation of Switzerland, whose territory extended between the two theatres of operations formed by the basins of the Danube and the Po; 2d. From the choice of a first right-angular base from Strasburg to Basle and from Basle to Constance; 3d. From the adoption of a second base of like form, extending from Marseilles to Lyons and from Lyons to the Saint Gothard.

He could thus turn the defiles of the Black Forest,

and penetrate the valley of the Danube, cutting the Austrian communications with Italy; could then debouch by way of the Saint Gothard into the valley of the Po upon Milan, thus cutting the communications of the Austrian general, Mélas, while Masséna held the latter at Genoa.

For the purpose of assuring the execution of this plan, Napoleon issued the following instructions for the guidance of Moreau, general-in-chief of the Army of the Rhine:

"*To General Berthier, Minister of War.*

"PARIS, March 1, 1800.

"You will impart to General-in-Chief Moreau my desire that he garrison Mayence, Strasburg, and all places of the first line, with the depot troops of all his demi-brigades and of his cavalry regiments.

"That before the 1st Germinal [March 21], his army will be as concentrated as circumstances will permit, in the space between Basle and Constance, its left extending as far as Strasburg for facility of subsistence.

"That he cause a bridge to be thrown over the Aar at the earliest possible moment, so that all the movements from Basle to Constance may be extremely rapid.

"That he gather together all things necessary for throwing three bridges between Schaffhausen and Constance, calculating the amount of material by the width of the Rhine."

Some days later he wrote to Moreau:

"Citizen General, after due consideration of the position of our troops in Switzerland, in Italy, and upon the Rhine, and the formation of the army of reserve at Dijon, the Consuls of the Republic have decreed the following plan of operations:

"Between the 20th and 30th Germinal [April 9 to April 19] you will cross the Rhine with your corps, profiting from the advantages offered by the occupation of

Switzerland for turning the Black Forest, thus nullifying the preparations which the enemy may have made to dispute its passes.

"The reserve corps will be specially charged with guarding Switzerland.

"The aim of your movement in Germany should be to push the enemy in Bavaria in such a way as to intercept his direct communication with Milan by way of Lake Constance and Grisons. As soon as this is effected, and it is certain that in no event will the grand army of the enemy be able—even supposing that it obliges you to fall back—to reconquer the space lost by it in a shorter period than ten or twelve days, the intention of the Consuls is to have Switzerland guarded by the last formed divisions of the reserve army, made up of less experienced troops than those which will compose your reserve, and to detach the latter with the best troops of the reserve army of Dijon, upon a movement across Switzerland and through the Saint Gothard and the Simplon, to effect a junction with the Army of Italy on the plains of Lombardy."

Moreau did not comprehend this plan, the magnitude of which, it may be, was beyond his grasp.

He replied to these instructions by sending General Dessole, his chief-of-staff, to the minister of war, to propose passing the Rhine at Mayence, Strasburg and Basle, and moving direct upon Ulm.

However, after an interchange of views, he consented to make a demonstration against the left of the Austrian army by the forest cities Engen and Stokach.

To this end, he was to march his left under Sainte-Suzanne by Kehl; his centre under Saint-Cyr by Neuf-Brisach, and his reserve by Basle. He thought thus to attract Marshal Kray's attention to the *Val d' Enfer* and the passages of the Kintzig, and then to steal away by a flank movement, march up the Rhine on the right

bank, mass his forces between Saint-Blaise and Stuhlingen, and cross his right wing at Stein.

Here is Napoleon's judgment upon the selection of this base and the combination resulting from it:

"Sainte-Suzanne passed the Rhine at Kehl, Saint-Cyr at Neuf-Brisach; they were to form a junction in Brisgau. Moreau felt the danger of this; he recalled Sainte-Suzanne to the left bank, and again moved across the Rhine by the Neuf-Brisach bridge; this was a false movement, and not a *ruse de guerre*. The march of thirty leagues from Vieux-Brisach to Basle and Schaffhausen, by the right bank of the Rhine, was regrettable; the army presented its right flank to the Rhine and its left to the enemy; it was in a *cul-de-sac* in the midst of ravines, forests, and defiles. Field-Marshal Kray was by that time forewarned of the intentions of his enemy; he had a week in which to concentrate; thus he was ready for battle at Engen and Stockach, and in condition to cover his magazines and Ulm, before the appearance of the French general, who yet had the initiative of the movement. If Moreau had debouched by Lake Constance with his entire army, he would have surprised and defeated the Austrian army and captured half of its forces; the débris would not have been able to rally before reaching the Neckar; and he would have arrived at Ulm before his adversary. What grand results! The campaign would have been decided within a fortnight."

While Moreau was committing these mistakes, Napoleon, confident in his genius, had resolved to put his projects for an Italian campaign into execution, utilizing the angular base of operations which the Alps from the Saint-Gothard to the Col di Tenda afforded him.

The decisive successes resulting from this skillful combination are matters of history.

We see that in these two campaigns, Napoleon gave the preference to angular bases, and the observations which they prompted him to make later, leave no doubt

of the fact that he regarded them as enlisting more advantages than any other.

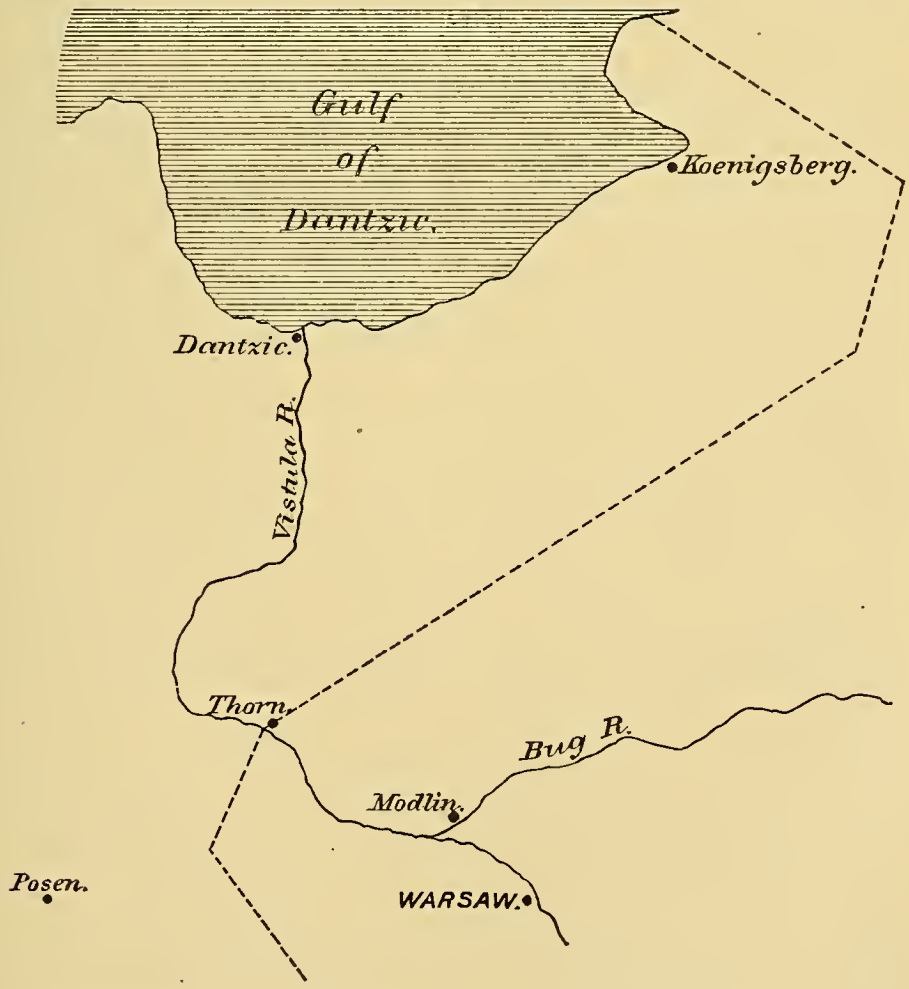
The Germans for a long time have recognized the value of angular bases. Hence, with their characteristic tenacity of purpose, it is rare that in the treaties made at the end of their wars, they do not contrive to secure bases advantageous for the future.

French Frontier in 1815.—It was in this behalf, that in 1815, General von Müffling, Blücher's chief-of-staff, insisted that our frontier should pass near Sarreguemines and Wissembourg. This was to secure for his compatriots an angular base against us by Cologne, Mayence, and Germersheim, permitting the Vosges to be turned without obstacle.

In 1870, the Prussians hastened to utilize this topographical configuration of the frontier.

Following the same idea, it is officially taught in Germany, that in case of a war with Russia, the march of a Prussian army upon Warsaw should be made by way of Thorn and the right bank of the Vistula, and not by Posen.

German Base in a War with Russia.—The truth of the statement just made will be apparent upon considering that in case of a German advance by way of Posen, the direction of the Vistula would permit the Russians to intercept the communications from the North; while, on the contrary, in the first case, the Germans based upon Thorn, Dantzic and Kœnigsberg, could threaten the Russian communications with St. Petersburg.*



*General Pierron.

To-day, the frontier which the victorious Germans imposed upon us by the treaty of Frankfort, aims likewise at giving them an angular base. This frontier extends from Metz to Donon and from Donon to the Ballon de Servance. It thus forms an open angle which will permit them in the next campaign to adopt an enveloping base of operations, and lines of operations converging toward the upper Moselle, turning the Meurthe.

It is, moreover, quite natural that a treaty should assure the conqueror such advantages. The essential thing is to use them to the greatest profit. They are of such importance that a prudent people will never neglect them.

Extent of Bases of Operations.—A proper direction is not the only quality requisite for good bases. Their extent has also a value, and it is probable that the campaigns of the future will give added importance to this feature. In reality, at the moment of assembling, armies are already near the theatre of first engagements. They should then be extended enough to supply themselves without difficulty, and sufficiently concentrated to fight. Consequently, the region which they occupy should be so limited as to permit them to unite for battle in a single day. From this it may be concluded that to-day armies will have an interest in occupying, upon their bases, but a narrow front compared with the number of their effectives, and that strategic deployments should not in general become too much developed. But it is not less true that the longer the base, the more easily can the line of communications be changed, and in consequence the more difficult will be its seizure. From this point of view, the advantages of extended bases of operations have not diminished; the manner of their employment only has been modified.

The Germans applied this principle in 1870 with a clearness which was not without influence upon their first successes.

Towards the 3d of August, while the French forces, to the number of 260,000, were dispersed over a front of 200 kilometres, extending from Sierck to Belfort, the German armies, aggregating 400,000 combatants, occupied, on the contrary, only the space between Bettingen and Landau, that is to say, 72 kilometres.

Formations of the Troops upon the Bases.—The necessity for keeping the troops closed up while upon their bases, on account of the probabilities of immediate combats, combined with the increase of the effectives, will necessitate formations in echelon. The same result, moreover, is brought about by the necessity of distributing the military debarking stations at intervals along the railroad lines.

In the march of the German armies to the Sarre, from the 2d to the 6th of August, 1870, the I. Army formed in advance with the III. and IV. Corps of the II. Army; then came the Guard, the X., IX., and XII. Corps, distributed along the debarking line at a mean distance of a day's march. It even happened at one time that the extent of ground occupied by these masses was so narrow that the different corps became entangled.

It results from these considerations, that independent of its direction, a base, to be advantageous, should have a length proportionate to the masses to be concentrated, and a depth sufficient to accommodate the different echelons.

There is another condition that will henceforth have a dominating influence. A good base should be the outlet of so considerable a number of railroads as to permit the corps to disembark and execute their strategic deployments in the least possible space of time.

This condition can be realized only through the foresight of governments, and by continued efforts and constant expenditures, which always present difficulties.

In 1870, the Germans had thus prepared nine lines of approach to their base, three of which led to Neunkirchen, Homburg, and Landau, upon the base itself; the others were in proximity. Since this time they have accomplished a similar but still more perfect work in their new province of Alsace-Lorraine. Here they have apparently formed two concentration zones; one comprising the space between Thrinville, Metz, Sarreburg, and Sarreguemines; the other between Saverne, Strasburg, and Mülhausen. Everything leads us to think that in another war these two zones would be used by them to establish their troops upon an angular base.

These considerations may be summed up as follows:

1st. *Bases of operations have been transformed by the establishment of railroads;*

2d. *The supplies formerly assembled upon the bases, will henceforth be distributed along the railroads charged with army transport service;*

3d. *Bases of operations are frontier zones which connect the armies with their country, and upon which they concentrate before the commencement of operations;*

4th. *The direction of the base, with regard to the enemy's lines of operations, increases in importance in proportion as the masses become more numerous and the first conflicts more imminent;*

5th. *An angular base is always the most advantageous;*

6th. *There should be a sufficient number of railroads running from the interior of the country to the base to assure the prompt concentration of the army.*

The dispositions of armies upon their bases, will be considered in connection with the study of concentrations.

II. FRONTS OF OPERATIONS.

The strategic front is often distinguished from the *front of operations*. Military men who have thought this a sound distinction have designated as *strategic front* the army's front of march, and as *front of operations*, the geographical space comprised between the strategic fronts of the opposing armies.

In reality, it is upon the extent and direction of the first only that the combinations of the commander-in-chief depend. The second, on the contrary, is the result of circumstances, and of the combinations of the two contending armies. It varies with these combinations, and generally imposes itself upon both of the adversaries during the entire continuance of active operations, with its advantages and its inconveniences. It will be sufficient here to point out the practical rules which concern the strategic fronts or fronts of march.

This is the space *occupied by an army's heads of columns*. It should fulfil certain definite conditions.

It has already been seen, in connection with the determination of the effectives, that the first of these conditions is the limitation of this front to such a compass as will permit the concentration of the army for action within the space of a single day. Consequently, each corps should not be required to march more than 24 kilometres [about 15 miles] to enter the line of battle.

It would be well, if such a thing were possible, to apply the same rule to the strategic front of the group of armies into which the large masses of to-day are formed. It is certain, however, that being given three grand armies, for example, it would hardly be thought possible to unite them for action upon the same linear front. We shall therefore be led, in the future oftener than in the past, to combine the movements of armies in such a way as to secure *angular* attacks. These were

the means most frequently used by Von Moltke to insure the concurrence of several armies in the same battle. This, in fact, happened at Königgrätz, July 3, 1866, and at Sedan, September 1, 1870.

We shall see further on, in connection with marches, the dispositions necessary for these combinations.

Direction of the Fronts of March.—If the extent of these fronts is a matter of importance in connection with the concentration of the forces for battle, and has an influence upon the number of effectives which it is possible to place in line, their direction has a not less material effect.

This effect is analogous to that attributed to the direction of bases of operations. Consequently, fronts at once perpendicular and oblique with reference to the front of the opposing forces, or, as has just been said, angular fronts, will be the most advantageous, provided they cover their proper communications while threatening those of the enemy.

Thus, a strategic front parallel to the adversary's line of operations, constitutes a direct menace to his communications; and if it is supported upon a second perpendicular base, the result will be to place the enemy in a critical position.

It was a front of this nature that the Prussians counted upon taking in 1870, had we invaded South Germany. They would have faced the south, parallel to our line of operations,—Strasburg, Würtzburg,—while supporting their right upon the Rhine. This manœuvre would have prevented our continuing on the offensive.

Napoleon I. knew how to modify his strategic front, at times, so as to give it the most advantageous directions.

Connection between Armies; Protection of their Flanks.—In-

dependent of the conditions of extent and direction, the fronts of march should be such as to offer to armies the means of keeping up constant connection with each other, and of continually protecting their flanks.

Consequently, whenever a front of march is broken by obstacles of the ground, difficult of access, the situation will be unfavorable.

In 1796, Würmser, descending from Tyrol and leaving Lake Garda between his columns, paid for his imprudence by the loss of his army.

In 1870, the German armies remained separated by the Vosges into two distinct groups from the 4th to the 13th of August, with two divergent fronts of march; on one side, the I. and II. Armies, on the other, the III. Army. This partition was a necessary consequence of the difficulties of the ground. But the commander-in-chief of the German armies knew that the French corps remaining still intact could not be thrown between these groups, because these corps were far in advance upon the Moselle. The momentary separation, then, of the two masses, was accompanied by no danger whatsoever. This example shows us that with the development of modern masses, it is much more difficult than formerly to fulfill the requirements connected with the maintenance of communications between armies.

It will, however, not be necessary to dwell longer here upon the subject of strategic fronts. Recurring to it further on, in connection with the study of marches, we shall consider it in detail.

III. LINES OF OPERATIONS.

Definitions of lines of operations are often vague or confused.

It is generally admitted that an army's line of operations is the system of communications conducting it from its base to its objective.

But it may be urged that in our time the base of operations is not so clearly defined as formerly; that an army does not always march from its base toward an objective; and that objectives are sometimes movable objects, other armies in motion, for example, which change place from day to day. Thus after a first battle, when the victorious army is directed upon the enemy's principal mass, it marches from one objective to another. It does not the less, however, on this account, follow a line of operations.

Finally, it is difficult, under all circumstances, to avoid confounding the line of operations with the line of communications. To insure precision, let us assume that the *line of operations of an army is simply the general direction followed by its columns.* It naturally embraces a system of ordinary roads, and, whenever possible, one or more railroads. It is then a true zone of territory, and is designated in accordance with its general direction or by the principal road of the system.

The line of operations selected at the outset should lead an army to its first encounters, and, in most cases, to decisive engagements. It has then an extreme importance; its selection influences the highest combinations of strategy, and it is not astonishing that its governing principles should have been profoundly studied by all military men.

Considered in their entirety, these principles relate to three orders of facts, namely:

The direction of the line of operations;

The necessity of having a *simple* line of operations;

The advantage of interior lines.

(*a*) DIRECTION OF THE LINES OF OPERATIONS.

According to Napoleon and the Archduke Charles, the most advantageous direction of the lines of operations is that which *permits an army to threaten the*

communications of the enemy without compromising its own.

Such is the general rule. But under this form, it remains a little vague. Here we are led to developments and exceptions. Jomini defines them in the following terms:

1st. "*The direction to be given to the line of operations depends upon the geographical configuration of the theatre of operations, and the position of the enemy's forces.*

2d. "Only a general direction of march can be adopted, which will be either upon the enemy's centre or one of his wings, *preferably the wing which is nearer his lines of communications.*

3d. "The movement may be made upon the front and both wings of the enemy with a greatly superior force; *but under all other circumstances, this would be a capital error.*

"In general, if the enemy distribute his forces upon a too extended front, it is better to direct the line of operations upon his centre. Under any other hypothesis, with freedom of choice, *it would be better to take a direction leading upon one of the enemy's wings, and thence upon his line of communications.*"

4th. "The configuration of the frontiers generally exercises a great influence upon the direction of the lines of operations, and upon the advantages attending these lines.

"Central positions forming a salient angle toward the enemy, as Bohemia and Switzerland, are the most advantageous, because they naturally lead to the adoption of interior lines, and increase the means of taking the enemy in rear."

At the commencement of the century, these principles still guided generals in the selection of lines of operations.

How far are they applicable to the conditions of modern war?

Let history inform us.

Campaign of 1800 in Italy.—We have already seen with what precision Bonaparte, then First Consul, had indicated to Moreau the true direction for the columns of the Army of the Rhine, in its march against the imperial army.

"The aim of your movement in Germany," wrote he to Moreau, "should be to so push the enemy in Bavaria as to intercept his direct communication with Milan by way of Lake Constance and Grisons."

The reasons which prevented Moreau's adoption of this plan have been explained. It remains to be seen how Bonaparte thought he, in his turn, should operate against the Austrian army which, under the orders of Mélas, had recovered Lombardy.

Overwhelmed by superior forces, our generals, Masséna and Suchet, had been driven back, the first into Genoa, the second upon the Var. Italy seemed lost to us. Mélas, confident in his recent successes, occupied Piedmont and the Nice district.

Bonaparte had at his disposal the Reserve Army, which he had assembled at Dijon, and of which he had retained command.

"An ordinary general," says Jomini, "alarmed by the victorious attitude of the Austrians in Piedmont, would have gone in all haste by Dauphiné toward Provence, and made the Alps the theatre of war. But Bonaparte appreciated too well the difficulties of a frontal attack. He preferred to cross the mountains upon the rear of the imperial forces and gain the Ticino unopposed, where his presence could not fail to recall his adversaries, and compel them to accept battle with all the chances of success against them."

To accomplish this, it was necessary to cross the Alps in their highest regions with a numerous army, without compromising his line of retreat, and without giving Mélas any intimation of the movement.

To put his plan into execution, Bonaparte first ordered demonstrations made from the direction of Mt. Cenis. Mélas was not alive to the existence of a real army of reserve, believing that this so-called army consisted only of scattered and unimportant bodies. These, he persuaded himself, intended to debouch upon the Dora Ripaira and Turin. He, therefore, continued his operations against the Genoese Riviera and the territory of Nice, while making preparations for the invasion of Provence.

In the meantime, Bonaparte directed his advanced-guard, under Lannes, upon the valley of Aosta. The passage of the Great St. Bernard was effected from the 15th to the 20th of May, and on the 27th, the entire Reserve Army was concentrated at Ivrea. After doubting the arrival of our columns for a long time, Mélas finally yielded to proofs, and marched upon Turin. Every one then believed that the First Consul, profiting by the success gained at Chiusella, designed marching upon the capital of Piedmont, in order to drive out the Austrian general and to effect a junction with General Thurreau, who had proceeded toward Susa by Mt. Cenis. Nothing of the sort was intended. (*See Plate VI.*)

Still aiming at the enemy's line of communications, and wishing first to collect the forces he had directed into Italy by the Simplon and St. Gothard, he left an advanced-guard before the enemy to hold him in check, and proceeded toward Milan, which he entered on the 2d of June. It was scarcely forty-eight hours previous to this that the inhabitants first heard of the existence of the Reserve Army, and of the passage of the Alps.

The evening before, Lannes had occupied Pavia, and

captured the Austrian park consisting of 300 guns, 200,000 pounds of powder, etc.

The French army had thus seized the enemy's line of communication before a single decisive battle had been fought. The Austrians were thus confined to the right bank of the Po.

The results of this combination were set forth by Bonaparte himself in the following letter:

"*To Citizen Carnot, Minister of War.*

"MILAN, 15th Prairial, Year VIII. (June 4, 1800.)

"We are at Milan, Citizen Minister. We found at Pavia 300 cannon with carriages, half of them field, half siege pieces; 200,000 pounds of powder, 10,000 new muskets, and a great quantity of war material of all kinds.

"This is the situation in Italy:

"The enemy has for a long time believed that we counted at the most only 7,000 or 8,000 men, and that we were attempting a raid to induce him to raise the sieges of Genoa and Nice; he persisted in this idea up to the 8th Prairial.

"In the combat on the Chiusella, his cavalry took 7 or 8 prisoners, from whom he obtained information to which he still refuses credence.

"On the 13th, General Hohenzollern, who commands the troops besieging Genoa, appeared, as you will see from the letter which I sent the Consuls, not to set a very high value upon our forces. General Mélas wrote to Pavia (to a woman who accompanies him): 'I know it is saïd in Lombardy that a French army is coming; have no fears; I forbid your leaving.' Twelve hours later we entered Pavia.

"We are at Lodi; Moncey's advanced-guard has reached Como, and is engaged in collecting boats for the passage of the Po.

"All the hospitals in Lombardy are in our hands; we found there from 5,000 to 6,000 sick or wounded. A part of the garrison of Savona, on the way to the rear as prisoners, were re-taken, and are now with us.

"You perceive that events of the greatest importance will shortly take place, which will have a singular influence upon the future of the House of Austria."

The brilliant victory of Marengo soon, indeed, crowned this remarkable series of operations.

Looking, then, upon the movements of this campaign in their bearing upon lines of operations, we see that while taking the enemy's principal army for his objective, Bonaparte commenced by seizing its communications. It was only after accomplishing this that he marched against the army itself.

Had he at the same time made dispositions to secure full and free possession of his own line of retreat? In answer to this, it is sufficient to cast a glance over the theatre of operations. It is clear, indeed, that if after the passage of the St. Bernard he had marched straight upon Turin, thence upon Asti and Alessandria, and then given battle at Marengo without first making sure of Lombardy and the left bank of the Po, his communications would have been more completely cut than were the enemy's. The direction given his columns was then justified, and the occupation of Casale and Pavia covered his line of retreat on the side of Switzerland. The only criticism suggested by the choice of this direction is that he had defiles in his rear, but defiles whose passage he was in condition to protect.

It has been seen before, with respect to bases of operations, that in 1805 and 1806, Napoleon manœuvred in the same way; that he marched first upon the communications of the enemy's forces, to compel them to accept battle while in a disadvantageous position, this being to him a first condition of success.

Later, in 1807, when Benningsen, beaten, fell back by way of the valley of the Alle, Napoleon could have pursued his columns by the right bank. He, however, preferred the left, for this led him directly to the communications established by his adversary upon Kœnigsberg. He was thus able to fight the decisive battle of Friedland, after having cut the opposing forces from their magazines.

In more recent times, the same principle was applied under similar conditions, notwithstanding the greater difficulties attending the management of the enormous masses of to-day.

In 1866, when Von Moltke, having reached Gitschin, had to determine the direction of the march of the I. Army and the Army of the Elbe, he immediately turned his attention to the communications of the Austrian army. Supposing the latter established upon the left bank of the Elbe, between Josephstadt and Königgrätz, he indicated Pardubitz as the objective point of the march. This is an important place at a bend of the Elbe, upon the road connecting the enemy's forces with Vienna.

In 1870, faithful to the same principles, which he seems to have borrowed from the campaigns of Napoleon, the chief of the Prussian general staff applied them with the same clear-sightedness, and, unfortunately for us, with the same result.

Operations in the East in 1871.—The Government of National Defense had formed the design of dispatching for the relief of Belfort, an army formed of the debris of the 1st Army of the Loire, under command of General Bourbaki. Assembled rapidly and quietly, it was to be transported to the East by rail; and, after raising the siege of Belfort, was to intercept the enemy's communications.

Information of the existence of this army and of the purpose of its creation did not reach the German general headquarters until the end of December, 1870. But about the 24th or 25th of this month, dispatches from Berne, sent by special agents, who were watching our movements in the East, announced that a corps of about 25,000 men had been directed from Lyons upon Belfort. The commander of the I. Reserve Division of the siege corps ascertained that French troops were camped at Clerval and Rougemont, and that a mass of 60,000 men was expected at Besançon.

Finally, French transportation employés of the 1st Army of the Loire, who had been captured by the Prussians, informed them that the movement toward the East had been in operation since December 22.

On receipt of this news, Von Moltke ordered the VII. Corps to suspend the siege of Langres, and to move from Auxerre to Châtillon-sur-Seine; the XIV. Corps fell back from Dijon to Vesoul; and finally the Governor-General at Strasburg was directed to send reinforcements to General Werder, who commanded both the XIV. Corps and the siege corps before Belfort.

Nevertheless, Von Moltke paused before coming to a final determination. It seemed to him that the most logical plan on our part was to make a combined march of the 1st and 2d Armies of the Loire upon Paris.

He, therefore, felt some uncertainty and hesitation regarding the proper movements to be made. However, as a first precaution, he directed the II. Corps from Paris upon the VII., to join with the latter in covering the investment of the capital, as well as the railroads leading from the South.

But when, on the 5th of January, 1871, Werder reported the engagements which had taken place before Vesoul, Von Moltke halted no longer. He was decided, and on the 6th, issued his orders, which may be briefly stated thus:

1st. Order to the II. and VII. Corps to assemble at Nuits-sur-Armançon and at Châtillon-sur-Seine;

2d. Formation of the Army of the South under General Manteuffel, comprising the two corps and all the remaining troops operating in the Southeast;

3d. Instruction sent to General Werder by a confidential *feldjäger*, defining the operations to be undertaken, as follows:

General Werder was relieved from the rôle of covering the siege of Belfort on the side of the west. His principal mission was to directly protect the siege operations with all the troops not absolutely indispensable for maintaining the investment; to destroy the roads to the south of the Vosges; to watch all the movements of our columns to the west of these mountains; and, finally, to keep in contact with the adversary, in order to prevent the latter from throwing himself with all his forces upon General Manteuffel. This last instruction shows that if General Bourbaki could not raise the siege of Belfort before the arrival of Manteuffel, it was upon the latter that he would be obliged first of all to direct his blows.*

Be this as it may, Von Moltke and the new commander-in-chief of the Army of the South would have to determine the direction of the line of operations. How should this be chosen? Time pressed, and the manœuvre to be executed was complex.

To understand the reasons leading to the final decision, let us hold to view the exact situation of affairs at this point. Manteuffel could not reach Versailles before the 10th of January. There he received only verbal instructions. which were, moreover, very brief.

"Werder was already struggling with Bourbaki. * * *

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*We know, however, that General Bourbaki had not the choice of his combinations.

To send him immediate succor was not to be thought of. * * * But, if possible, Manteuffel was to throw himself upon the communications of our army. The effect produced would be considerable. The measures to be taken to reach this result were left to his discretion."

General Manteuffel departed to rejoin his troops, and on the 12th of January arrived at Châtillon-sur-Seine. The situation was as follows: his two corps were found dispersed upon a front of 35 kilometres, the II. extended from the Armançon to the Serain, the VII. from the Aube to the Seine. The latter effected its concentration partly by marches, partly by rail. Werder was in position upon the Lisaine, where the struggle had already begun. (*See Plate VII.*)

The French army was then completing its deployment between the Doubs and the Ognon.

The first questions presenting themselves to the mind of Manteuffel were:

What course should be determined upon, and what direction chosen for the march of the columns?

Various considerations guided him toward the most practical solution.

He could take possession of Dijon. The seizure of this place, the capital of Burgundy, was seductive; it would produce a great moral effect, and extend the sphere of action of the invading armies. But danger was threatening under the walls of Belfort, and the first consideration was to avoid loss of time. A movement upon Dijon was then foreign to the problem in hand, and would cause delay.

The simplest plan consisted *in marching straight upon the enemy's principal army, and in directing himself first of all upon its communications.*

By this means, if Werder should be pushed back upon upper Alsace, Manteuffel would fall upon the rear-guard of the victor. If, on the contrary, Werder succeeded

in repulsing our attack, and obliged us to retreat, Manteuffel would march to meet us, throwing himself upon our communications by a change of direction to the right.

These definite resolutions were reached by Manteuffel on the day of his arrival, January 12, and from this time, he had only to choose his roads.

The country to be traversed was difficult—a hilly and wooded region, with roads which were scarcely practicable. The secondary chain of the Morvan, which must be crossed, was a decided obstacle, especially at this season. The connection between the columns could not always be relied upon. And finally, the line of direction passed between Dijon and Langres, two points strongly occupied by the enemy. Some resistance then was to be expected here. Nevertheless, the case was urgent; hesitation and delay were more than ever dangerous. Consequently, Manteuffel decided to take the most direct roads, while keeping up his communications with Paris, by Châtillon-sur-Seine. Having arrived at this conclusion, he issued his orders on the night of the 12th.

His first care was to secure his own communications. To this end he formed a mixed brigade (Kettler). It was to cover the line Châtillon-Nuits-Tonnerre, which was of the greatest importance for the troops operating in the basins of the Loire and the Sarthe. This line had moreover the advantage of uniting the communications of the II. and VII. Corps. And, in case of necessity, these corps could be marched upon Blemes, a junction station upon the principal eastern railroad.

Then, foreseeing the difficulties that would probably be experienced in giving orders regularly to his two corps, during their march toward the east, he thought it prudent to accompany the detailed instructions by an outline of the first end to be attained and the plans which he had formed.

The main ideas at the outset were:

1st. To rapidly gain the defiles of the Morvan mountains;

2d. To guard them.

In leaving the defiles, each column was to deploy to the right and left, in order to facilitate the exit of the various bodies.

All the dispositions being made, the march began. It was the 14th of January, the very day of the first combats between Werder's outposts upon the Lisaine and our advanced-guard. Notwithstanding the intense cold, the poor roads, and the hardships imposed upon the Prussian troops, the columns followed regularly the indicated roads.

The VII. Corps was covered by a detachment on the left, against Langres, the garrison of which, however, remained passive. The corps on its march destroyed the telegraph and railway line branching from Chalindrey.

The II. Corps was protected on the right by the mixed brigade, against the enterprises of the defenders of Dijon.

On the 18th of January, the Seine at Gray was reached without hindrance, when Manteuffel received dispatches from Werder which completely changed the face of affairs. Our efforts had failed, and Bourbaki, not having been able to carry the positions on the Lisaine, had been obliged to retreat to Besançon.

In this situation, the temptation was strong for Manteuffel to effect a junction with the XIV. Corps towards Rioz and Montbozon, and to endeavor then to overpower our already enfeebled forces. This project was, in appearance, the most reasonable; it was at least the simplest; but it excluded all possibility of decisive results; the cohesion of the enemy could be still further diminished, his losses increased, but he could not be destroyed.

If, on the contrary, the II. and VII. Corps, inclining their lines of operations toward the south, should move upon Bourbaki's communications, the latter would be constrained to retreat by a narrow strip of territory between the Saône and the neutral frontier of Switzerland. If the Besançon road should be occupied before our troops arrived under the walls of this place, their situation would be extremely critical. The march of the II. and VII. Prussian Corps would certainly not be without danger, for they would thus have Besançon upon their flank. The bridges of the Ognon, the Doubs, and the Saône were so many defiles, left upon their rear, which would be menaced by the garrisons of Dijon and Auxonne.

However, Manteuffel persisted in his plan of marching straight upon Bourbaki's communications, and on the 13th of January submitted it to the King at Versailles, for his decision.

Von Moltke was the first to support it, saying to his sovereign :

"This movement is extremely bold, but it may lead to most important results. If Manteuffel should receive a check, he must not be blamed, for to obtain an important success, something must always be risked."

In consequence, on the 19th, Manteuffel ordered the march toward the east to be resumed, and prepared for his change of direction toward the southeast. The same day, he received information that Werder was to pursue Bourbaki, and upon the 20th would be upon the line Noray-le-Bourg-Villersexel-Onans, extending thus his right across his adversary's line of retreat. Now was the time to throw the II. and VII. Corps upon the rear of the beaten army, that is, upon Dôle and Dampiere-sur-Doubs. The order for this was immediately given.

On the 21st of January, the advanced-guard of the

II. Corps arrived at Dôle. The same day the VII. reached the Ognon, encountered the first outposts of the French, and established its connection with the XIV. Corps.

On the 23d, the roads to the south of Besançon were closed; on the 24th, the order was given to attack Bourbaki. Manteuffel had accomplished his purpose. In fact, the direction chosen for his line of operations had led him at once upon his enemy's communications; he had but to march upon the adversary and defeat him. We know that, unfortunately for us, the retreat into Switzerland, and the consequent loss of our Army of the East, were the results of this skillful combination. This march of Manteuffel, approved by Von Moltke, shows that the principles which guided Napoleon, at the commencement of the century, are still true, and that their intelligent application should insure results of signal importance.

In the present instance, however, it must not be lost from view that Bourbaki's soldiers were not as experienced as their adversaries, and that in strategy, as in tactics, this is a dominating consideration.

To be the stronger at the critical point fulfills every requirement for success. Had Bourbaki possessed this advantage at Héricourt, he would, perhaps, have triumphed in this campaign, and, at Besançon, he would have remembered that he occupied a strong central position, against a divided enemy advancing upon two separate lines of operations. He would certainly have profited from this situation. But his soldiers were thoroughly exhausted. Though well officered, and embodying many good *cadres*, his forces were no longer in condition to fight, and our adversaries dared venture anything.

Contemporaneous wars offer us examples also of lines of operations directed upon the centre of the enemy's

forces. But such dispositions are associated with interior lines. It will then be proper to study them with the latter.

If we wish to epitomize the preceding, it will suffice to recall the rule of experience so clearly expressed by Jomini:

"One of the principles of strategy is *to first seize the enemy's communications, and then turn upon his army.* The direction of the line of operations should be that which holds out the surest promise of decisive success, and which forces the enemy to stake the fate of his army upon the issue of a single battle. It is imperative then to *move rapidly upon him, and smite him until he is destroyed.*"

(*b*) UNITY OF LINES OF OPERATIONS.

Independent of the proper selection of roads to be traversed by the columns, military men of all times have recognized *that an army should have but one line of operations.*

This principle is one of those most clearly exemplified in the campaigns of Napoleon. And yet, when he succeeded for the first time to the chief command, it seemed that its utility had up to that period been unappreciated and neglected. During the first wars of the Republic, indeed, it was often set at naught, and this error always led to disastrous consequences. It will not be without advantage to acquaint ourselves with instances of this.

Campaign of 1795 in Germany.—In this year the Directory resolved to carry the war into Germany. Jourdan, at the head of the Army of *Sambre-et-Meuse*, was to cross the Rhine at Dusseldorf. Pichegru, with the Army of *Rhin-et-Moselle*, was to pass at Mannheim and to effect a junction with Jourdan upon the Main.

The Austrians, commanded by Generals Clairfayt and

Würmser, were at Mayence, between our two armies, whose lines of operations were separated by 50 leagues, without possible lateral connection. The enemy, on the contrary, was operating on a single interior line, which offered him the advantage of being able to mass his forces successively against each of the opposing armies. Our adversary seized this advantage, and our separated armies, attacked one after the other by superior forces, were beaten.

The Directory was not able to account for these reverses, and contented itself with replacing Pichegru by Moreau.

Campaign of 1796, in Germany.—This campaign is one of the most fertile in instruction which history offers. Later, this fact forcibly struck Napoleon. At the moment the events of this war were transpiring, he was on the threshold of his career, engaged in struggles with superior forces and numberless difficulties in Italy, and had consequently neither time nor opportunity to occupy himself with them.

The Aulic Council at Vienna had replaced Clairfayt by the Archduke, and toward the end of May, 1796, decided to send Würmser to Italy. The Archduke remained sole commander-in-chief of the forces assembled on the Rhine.

The situation was as follows:

In advance of Mayence, at Baumholder and upon the Nahe, was stationed an Austrian force of 80,000 men, with a corps under orders of the Duke of Würtemberg, between the Lahn and the Sieg.

Jourdan guarded the Hundsrück, observing the Archduke. (*See Plate VIII.*)

A second force of 70,000 Austrians in the Palatinate, acted in conjunction with the first army, and covered Mannheim against the enterprises of Moreau.

On our side, two groups of forces and two fields of

operations; with the Austrians, on the contrary, a single mass.

According to the plan of campaign of the Directory, the Army of *Sambre-et-Meuse*, leaving its right in Hundsrück, was to advance at first by Dusseldorf to concentrate the enemy's attention upon itself, for the purpose of facilitating Moreau's passage of the Rhine. It was hoped thus to force the Archduke to quit the left bank of the Rhine, on account of the menace to his communications. In fact, it was for this reason that the Directory gave its armies two lines of operations. The imperial forces on their side, committed a similar error, but had the advantage of possessing interior lines of operations.

Our generals, feeling the inconvenience of this plan, protested; but they were obliged to conform to it, at least in part; and during the first days of June, Kléber entered the basin of the Sieg, and defeating the Duke of Würtemberg at Altenkirchen, cast him back upon the Lahn.

On receipt of this news, the Archduke abandoned the left bank of the Rhine, and marched with all his disposable forces toward the Lahn, to the succor of his lieutenant.

When Jourdan learned of the departure of his adversary's forces, he dispatched a body of light troops to follow their rear-guard, and moved out by his left flank to cross the Rhine at Neuwied, for the purpose of supporting Kléber.

General Marceau, with 20,000 men, remained before Mayence.

These first movements led to the encounter at Wetzlar upon the Lahn, between the Archduke's forces and one of Jourdan's wings, commanded by General Lefebvre, the divisions of which were very much spread out. The latter forces were overwhelmed by superior numbers, and beaten.

Jourdan then found himself in a dangerous position; his army, perpendicular to the Rhine, had this large water course on its right, and a victorious enemy on its left. To disengage himself, he might have attempted a change of front. This would have led to the establishment of his line of battle parallel to the river, in which case he ran the risk of being driven upon it. If he remained on this side of the Rhine, there was but one course open to him, to take the offensive with all his forces. He preferred to retire, fearing to give battle in this situation.

Moreover, the object of his march to the Lahn seemed to him already accomplished, since he had induced the bulk of the Austrian forces to let go their hold upon the Rhine and follow him there. Consequently he recrossed the Rhine at Neuwied, while his left wing under Kléber retreated toward the Sieg and Dusseldorf.

Some days later, the Archduke leaving, in his turn, the vicinity of Altenkirchen, moved with a part of his forces against Moreau, who had crossed the Rhine at Kehl, threatening the important line of the Danube.

In fact, the adoption of two separate lines of operations had, in less than a month after the commencement of the campaign, the regrettable result of enabling the Archduke to beat one of our corps in an isolated combat, and to force the retreat of one of our main armies.

What was passing during this time upon the upper Rhine?

Moreau, after taking command of Pichegru's army, had seen the Austrian forces diminish little by little on his front, and finally return to the right bank. This resulted from the fact that Würmser had received orders from Vienna to dispatch reinforcements to the Army of Italy. Finding himself then too weak and in too exposed a position, after the departure of the Archduke

for the Lahn, he had in turn fallen back beyond the Rhine. A short time after this, he was ordered to give up his command and proceed to Italy, being replaced by General Latour, who was to operate under the Archduke.

Moreau had profited by these circumstances to forcibly cross the Rhine at Kehl, on June 23, and direct himself by way of Renchen toward the basin of the Neckar.

The Archduke heard of this on the 26th. He took in the gravity of the situation, and resolved to gather together all his forces for an encounter with the army about to threaten his principal communications and perhaps forestall him upon the Danube. He immediately assembled his disposable troops, and quitting the banks of the Lahn, set out with about 25,000 men, leaving a strong garrison at Mayence and a corps of 38,000 men upon the Main under Wartensleben. His army was so dispersed that its concentration seemed difficult. In this the Archduke succeeded as well as possible under the circumstances, and as soon as the forces in hand seemed sufficient, attacked his adversary on the plains of the Rhine. But General Latour did not know how to use his numerous cavalry to advantage, while on our side the tactical dispositions of Desaix threw the imperialists into confusion. The latter were defeated at Rastadt and Esslingen. The Archduke concluded from these defeats that he was not in condition to stay the march of the Army of the Rhine. He therefore resolved to effect a concentration of the scattered Austrian forces in rear, in the vicinity of Ratisbon, to throw himself first of all, with the bulk of his troops, upon the Army of *Sambre-et-Meuse*, and then to return with greater chances of success against Moreau. He accordingly retreated to Pforzheim, and thence to Nordlingen, covering thus his communications, and drawing near the Danube,

which he reached about the 10th of April. Finding himself followed by Moreau, he attacked the latter at Neresheim, where an indecisive battle was fought. Then, continuing his retreat, he crossed, on the 13th, to the other side of the Danube, destroying the bridges as far as Donauwerth. This movement had an object. The Archduke had just learned that the Army of *Sambre-et-Meuse*, favored by the crossing of the Army of the Rhine at Kehl, had resumed the offensive, thrown back Wartensleben, and was advancing upon Würzburg.

Profiting by his central position, and the dangers his adversaries were running by employing two independent lines of operations, the Archduke conceived the plan of leaving a retaining force in front of Moreau, and hastening to assail Jourdan with superior numbers.

The latter, after recrossing the Rhine and calling Kléber to him, took the field against Wartensleben, who had at first occupied the line of the Lahn. The Austrian commander, having received orders not to come to any serious engagement, and having satisfied himself of the numerical superiority of the French army, decided to retreat to the Main. Jourdan continued his march, seized Würzburg on the 25th of July, and advanced his forces according to the instructions of the Directory, upon both banks of the Main, without attempting to co-operate with the Army of *Rhin-et-Moselle*. (*See Plate IX.*)

On the 4th of August, he occupied Bamberg. On the 7th he drove back General Kray at Forcheim, then ascended the Regnitz by both banks, seized Amberg, and about the 20th of August arrived upon the Naab, where the Austrians, establishing themselves upon the strong positions afforded by this region, finally discontinued their retreat. The two armies were then separated by the river.

Bernadotte, detached to Neumarkt, observed the road to Ratisbon, and covered Jourdan's right flank.

After the battle of Neresheim, 11th and 12th August, the Archduke resolved to march to the Naab, convinced that a victory over one of the two hostile armies would compel the retreat of the other. Yet before putting his plan into execution, he endeavored to draw Moreau to the right bank of the Danube. The latter, however, desired rather to manœuvre on the left bank, which offered facilities for joining Jourdan. He at first followed the Austrians in the direction of the Wornitz. But the Directory ordered him to advance by the right bank, for the purpose of facilitating the operations of the Army of Italy. In consequence, he crossed the Danube on the 19th of August, and took position upon the Zusam.

As soon as this movement was completed, the Archduke left Latour with a corps of 38,000 men upon the Lech, to bridle the Army of the Rhine, recrossed the Danube, and marched by way of Ingolstadt upon Neumarkt, with the remainder of his forces, 24 battalions and 50 squadrons, about 28,000 men.

Bernadotte, who had been posted in an isolated position at Neumarkt, was struck first. Assailed by superior forces, he was obliged to fall back upon Lauf and Forcheim. Jourdan, learning of this attack, and fearing for his right, abandoned the Naab and retired upon Amberg, where he took position on August 24. Wartensleben immediately followed him, and hastened to form a junction with the Archduke.

Jourdan, beaten at Amberg, was obliged to retreat. But the Nuremberg road had already been seized by the enemy. He was compelled, therefore, to move toward Velden, and thence upon Schweinfurth. The Archduke then occupied Würzburg. Jourdan, pressed by the Directory, vainly endeavored to recapture this place. His adversary had all his forces assembled upon the right bank of the Main. The battle of Würzburg, fought

under these conditions, was another repulse to our arms. Jourdan was obliged to retire upon Armstein, thence upon the Lahn, through Fulda and the difficult country surrounding it. To extricate him, Marceau received orders to raise the siege of Mayence and to cover the retreat. This was conducted *en échelons* and in good order, notwithstanding the pursuit and attacks of the Austrians, but not without new reverses. It was in one of the combats of this period, at Altenkirchen, after a glorious struggle against an infuriated and outnumbering enemy, that Marceau met his death.

Finally, on the 20th of September, the Army of *Sambre-et-Meuse* was obliged to recross the Rhine a second time; after this, it took no further part in the campaign. Jourdan was immediately relieved from his command.

Thenceforth, the Archduke was free to march, with all his forces, either directly against the Army of the Rhine or upon its communications. To appreciate the situation, let us return to the operations on the Danube.

Upon learning of the departure of the Archduke, far from seeking to strengthen Jourdan's army, the success of which was the surest guaranty of his own, Moreau resolved to penetrate Bavaria, in order to make a diversion in favor of his colleague. He crossed the Lech, drove Latour upon Landshut, and advanced to the Isar, where several insignificant combats took place.

But soon, news from the Army of *Sambre-et-Meuse* began to disturb him. He advanced toward the Danube, and, in the first days of September, attempted to open communication with that army. But it was too late; Jourdan was already upon the Lahn. When Moreau learned of the battle of Würzburg, and of the retreat of our forces, he comprehended the dangers of his isolated position. He decided to fall back upon the Lech, then upon the Iller, where he was in position on the

24th of September, followed by Latour, whom he was disposed to resist. But the absence of news from Jourdan made him apprehensive of a descent by the Archduke upon his rear. Further, an Austrian corps, directed upon Ulm, threatened to outflank his left. There was nothing remaining but to yield to circumstances, and seek to regain the Rhine without delay. The enemy then began to press him, and in order to disengage himself, he fought the battle of Biberach, gaining a complete victory.

But this success did not extricate him from his embarrassments. The Archduke, marching straight upon his communications, had compelled one of his divisions to cross the river at Mannheim. Moreau could no longer think of retiring upon Strasburg by the valley of the Kintzig, which was guarded, and too near the Austrian corps arriving from the banks of the Main. He then took the *Val-d'Enfer* route, leaving only a strong rear-guard in front of Latour. Yet, before repassing the Rhine, he made another attempt at resistance. But his adversaries had united, and, after several unimportant combats, he was forced to recross the river at Brisach and Huningen.

The campaign was ended, and in spite of brilliant feats of arms, and of Moreau's highly applauded retreat, the results had declared against us. Thus, for two consecutive years, our armies in Germany had been forced to evacuate the theatre of operations and retreat upon the Rhine, leaving all the advantages to the enemy. And yet these armies were large, and composed of warlike and daring troops, commanded by worthy generals. Jourdan and Moreau were leaders of talent, and had under them men of unusual capacity, such as Kléber and Marceau, in the Army of *Sambre-et-Meuse;* Desaix and Gouvion Saint-Cyr in that of *Rhin-et-Moselle.*

How was it that at the same period a smaller body of

troops, of like character, gained brilliant victories in Italy? It resulted from a difference in the directing thought.

In Germany, we constantly adopted double lines of operations, far distant from each other, and without possible connection between them, leaving to our enemies all the advantages resulting from the employment of interior lines, or a single operating line.

The Archduke Charles made skillful use of the advantage thus thrown into his hands, marching from one of our armies to the other, overwhelming the first with superior forces, and returning then upon the second, and threatening its communications.

In Italy, it was our adversaries that committed these mistakes. There were then striking analogies in these two campaigns.

Our lack of success in Germany, however, could not be attributed either to Jourdan or Moreau, but to the author of the plan of campaign—the Directory. It had fallen again, in 1796, into the error which had already led us to reverses in the preceding year.

A valuable lesson of experience may then be drawn from these events; it is *that with good troops and excellent generals, there is yet danger of disastrous results when the directing thought is guided by false principles.*

The necessity for a single line of operations is set forth more forcibly still in the campaign which opened the following year.

Campaign of 1797, in Italy.—(*See Plate X.*) In this year the two conquerors of 1796 found themselves facing each other. Our army of Italy, under Bonaparte, had successively destroyed four hostile armies, and won the the brilliant victories so renowned in history. Two divisions drawn from the armies of the Rhine and *Sambre-et-Meuse*, and commanded by Generals Bernadotte

and Delmas, had been sent him. This raised his effective to only 60,000 men; but these were more than he required to gain new successes, and to reply by new triumphs to the jealousies of the Directory.

At the end of January, 1797, he occupied the Adige and the Italian Tyrol.

The Aulic Council at Vienna had intrusted the command of the Austrian forces in Italy to the Archduke Charles. The latter had demanded a reinforcement of 40,000 men, drafted from the troops in Germany, in order to recruit the army of Alvinzi up to 80,000 combatants. While awaiting their arrival, the Archduke had established his headquarters at Innspruck, where he was in person, on the 6th of February.

Bonaparte concluded from this, that his adversary would unite the principal forces in Tyrol, leaving only a detachment—a division, perhaps—behind the Tagliamento, to cover Friuli. This combination offered the Archduke several advantages. First, it was impossible to prevent the union of his forces. Then, he would be able to receive his Rhenish divisions twenty days earlier in Tyrol than in Friuli or Carinthia. He had before him Joubert, whom Bonaparte had placed near Trent with 17,000 men. The Archduke could bring an overwhelming force against these.

In anticipation of this event, Bonaparte communicated his apprehensions to Joubert, ordering him to take up a strong defensive position, so as to be able to hold the Archduke in check, while his own forces took the latter in rear by the defiles of the Brenta.

But these were simple hypotheses. The Aulic Council ordered the Archduke to concentrate his forces in Friuli. As usual, Carniola and Trieste absorbed the attention of the Council, and it endeavored to preserve this section from invasion. The Archduke moved his headquarters then to Villach and Göritz.

When Bonaparte was informed of this, he divined the new combination decided upon by the Austrians, and immediately conceived the plan of attacking them before the arrival of their reinforcements, and of seizing their line of communications.

On the 13th of March he gave detailed orders, fully explaining his projects, to Joubert and to Masséna, the the latter being at Belluno with his division.

At the same time he left the divisions of Victor and Kilmaine in the Marches and in Romagna, to observe the Papal army and Naples.

"*To General Masséna.*

"HEADQUARTERS, CONEGLIANO, 23 Ventôse, Year V. (March 13, 1797), 7 o'clock P. M.

"General Masséna is informed that Serurier's division is at Conegliano; that General Guieu's division, and the cavalry reserve, are at Sacile; that since yesterday we have been across the Piave.

"The enemy is retiring, and appears to have decided to take position behind the Tagliamento. The General-in-chief hopes to deliver a blow which shall decide the fate of the campaign, and cover the Army of Italy with new laurels. He is certain that Prince Charles commands.

"The General-in-chief orders General Masséna to set out to-morrow for Belluno, and move toward the Tagliamento; he desires him to be at Aviano to-morrow evening, where he will receive new orders. If from information gathered, it should appear that the nature of the roads will not permit his artillery to follow him, he should send it under escort to Sacile, from which place it could rejoin him upon the Tagliamento.

"In case the snows, or indeed the nature of the roads, prevent General Masséna's infantry from marching to

Aviano, he could take the road from Belluno to Sacile, endeavoring to gain Pordenone, beyond Sacile, on the road from the latter place to San Vito, within two days. It is important that the General-in-chief be informed at the earliest moment of the route taken by General Masséna, and of the place in which he shall sleep to-morrow and afterwards. Although the General-in-chief presumes that the forces which he has at this moment are sufficient to insure victory, he may think it well to delay his attack for a day, in order that the brave Masséna division may participate.

"The enemy appears very uneasy, and will find himself again caught at the very moment when he is putting his adopted plan into execution. Everything presages the grandest successes for us—successes which must decide the campaign.

"Should General Masséna have given orders to General Baraguey-d'Hilliers, he will apprize the latter of his movement, in order that he may no longer act as if he alone covered General Joubert's right. In every case, General Masséna should keep these two generals informed."

Bonaparte's attention was especially directed to the position of Joubert, to whom he addressed instructions setting forth both the provisions to be made and the precautions to be taken.

"*To General Joubert.*

"HEADQUARTERS, SACILE, 25 Ventôse, Year V. (March 15, 1797).

"In order to form a junction of the divisions which are in Tyrol and those in Friuli, it is necessary for the latter to cross the Tagliamento, seize the position at Osoppo, force the passes of Pontebbana, and reach the valley of the Drave.

"The Tyrol divisions should arrive at Brixen and drive the enemy beyond the high chain of mountains separating Innspruck from Brixen. But events may occur which the contingencies of war require should be provided for in advance:

"1st. The Tyrol divisions may be beaten and obliged to fall back upon the Mori line, or even that of Rivoli; be forced into the intrenched camp of Castelnuovo, and reduced to the defense of the Mincio; or even be compelled to shelter themselves in Mantua.

"2d. The enemy may endeavor to penetrate by Feltre and Primolano, in an attempt to break our communications; this, in the present condition of things, appears to me very difficult.

"3d. It may happen that, by some movement or another, the divisions which are in Friuli may be outflanked on the right or the left, and that a head of column of the enemy may hence gain the Piave and even the Brenta, before the Friuli divisions.

"Should the first hypothesis prove correct, but only in this case, you will make use of the order which I send you, giving you command of the divisions located in the district of Mantua, as well as in Lombardy and the whole of the country comprised between the Oglio and the Adige.

"In every case, you must provision and hold Peschiera, Porto-Legnago, Mantua, and Pizzighettone; place yourself between Mantua and the Po, in a position to supply yourself by this river, and to fall upon the rear of the enemy if he dare to advance into the Milanese; inform General Sahuguet that he is to concentrate all his forces in the castle of Ferrara. I shall give you, moreover, as the exigencies of events demand, all necessary instructions, not doubting that, under all circumstances, you will act conformably to the spirit of the war which we are now waging.

"You understand that it is essential, in case you are

beaten, to dispute every position, and to make use of all resources of art and of all natural features of the ground in order to give the Friuli divisions time to take proper measures.

"You will find enclosed herewith, Citizen General, detailed instructions upon the different cases which may arise.

"Prepare to attack Botzen by the most convenient direction, taking the snows into consideration.

"To-morrow we shall make a crossing of the Tagliamento, which it is said the enemy intends disputing. I desire you to begin your movement on the 27th or 28th. If the weather continues as fine as to-day, and fortune favors us, I calculate upon being in the defiles of the Pontebbana on the 30th; that is, upon the road leading from Udine to Klagenfurt. I shall write from Udine in greater detail.

"You will find inclosed, instructions for your future government, should you succeed in seizing a part of Tyrol. BONAPARTE."

In his combination, Bonaparte seemed to adopt two lines of operations: one through Friuli, the other through Tyrol and the Pusterthal. But this was only in appearance. The line indicated to Joubert was to be followed only in case of the success of the main forces. It extended through a country impracticable for the enemy, and was to be connected by means of Masséna's division with the operating line of the principal army.

We should not, moreover, forget that in moving toward the Noric and Julian Alps, Bonaparte had upon his left a hostile corps, established in the midst of Tyrol, and ready to cut his communications by the valley of the Adige, aided by the warlike inhabitants of this country. Joubert's corps had then, a special mission. It was a necessary detachment, but it was only a detach-

ment. The line of operations was that pursued by the bulk of our forces.

In reality, the decisive movement, that of the army proper, was to take place upon a single line of operations, the line in Friuli.

It commenced on March 10. Bonaparte wished to have the advantage of the initiative. On the 16th he encountered the bulk of the enemy's forces in position upon the left bank of the Tagliamento, with the Archduke in command. The latter's line of communications, which he seemed to cover, in reality extended from his right toward the pass of Tarvis, and was in no wise protected against attacks coming from this side. Bonaparte, in pushing Masséna forward, counted upon seizing it, while he himself engaged the enemy's main forces. This manœuvre was an entire success.

While Bonaparte was defeating the Archduke upon the lower Tagliamento, Masséna, starting on the 14th from Belluno, reached Aviano, drove back the Lusignan division of the Austrian army, captured its commander and its rear-guard, passed the Tagliamento at San Daniele on the 16th, without opposition, and then marched rapidly upon Osoppo, Chiuesa-Veneta, and Pontebba, the latter of which he captured on the 21st. It was at this point also that he threw the Austrian Ocksay brigade into disorder, pursuing it beyond Tarvis, and taking 600 prisoners. By the same blow, all the magazines established in this region for the Austrian cantonments, fell into his hands,

In fact, on the very day of the Archduke's defeat, his line of retreat was seized by the enemy. But he still hoped to regain it. He had, indeed, conceived the project of concentrating all his forces at Villach, in front of the Drave, where the first columns of the troops from the Army of the Rhine had just arrived. To effect this, it was necessary for him to insure the junction of his

right, composed of Bayalisch's three divisions, with four battalions of grenadiers already at Villach, and the divisions in march for Klagenfurt. The remainder of the Friuli troops was to join these forces at Laybach.

But the rapid passage of the Isonzo by the enemy, and the feeble resistance of Gradisca, overturned these calculations. Menaced upon his right by Masséna and by General Guyeux, who was marching upon Cividale, the Archduke had nothing left but to order Bayalisch to accelerate his movement, while he himself, with the troops of the left, directed his march upon Laybach and Krainburg. This was to separate his columns by the entire chain of the Carnic Alps, and to expose them to isolated defeats by the indefatigable activity of his adversary.

This is indeed what happened. Masséna, pushing on to Tarvis, seized the pass, overthrew, first, the reinforcements sent from Klagenfurt by the Archduke, then Bayalisch's advanced-guard when it came up. The remainder of Bayalisch's force, pressed by Guyeux, and no longer having the support of the fort of Chiusa-di-Pletz, which had fallen into our hands, soon found itself between two fires, and was forced to capitulate.

The road to Vienna was now open.

It remained first, however, to connect with Joubert. The latter, putting his corps in movement after the battle of the Tagliamento, had occupied Botzen, thrown back the troops of Davidovitch, one part into the valley of Meran, another beyond the Brenner, and taken Brixen, thus assuring himself of the Pusterthal road. Notwithstanding the uprising in Tyrol, and the difficulties of his situation, he maintained himself at Brixen, awaiting news of the arrival of the main army upon the Drave. On receipt of favorable intelligence, he burned the bridges behind him, collected all his disposable troops, ascended the Rienz to the pass of Toblach, gained the sources of the Drave, and, by way of Lienz, reached Villach, where junction was made with the main forces.

The Treaty of Leoben, negotiated shortly afterwards, was the fruit of these remarkable operations.

Yet, notwithstanding the results attained, this was one of the most severely criticised of Napoleon's campaigns. The victor was especially censured for having adopted two distinct lines of operations.

It is interesting to know how he himself refuted these strictures:

"Was not the march into Germany by two lines of operations, those of Tyrol and Pontebba, a violation of the principle that an army should have but one line of operations? Was not the union of these two corps in Carinthia, so distant from the point of departure, contrary to the principle of never joining columns in the face of the enemy? Would it not have been preferable to have left from 7,000 to 8,000 men before Trent upon the defensive, and to have collected 10,000 or 12,000 more upon the Piave? This plan would have avoided the necessity of carrying on the war in Tyrol, a difficult theatre; it would not have been exposed to chances unfavorable for a junction of the columns; and at the outset of the campaign, all the forces would have been concentrated.

"Neither of the principles above cited has been violated. If only 8,000 men had been left with Joubert upon the Avicio, he would have been attacked, and the corps of Davidovich would have reached Verona before the French army arrived at Villach. For the purpose of maintaining himself upon the Avicio, Joubert required at least 14,000 men. It seemed preferable to leave his forces undiminished, thus giving him a numerical superiority which would enable him to defeat Davidovich, shatter and demoralize him, and drive him beyond the Brenner. Tyrol is a difficult region, but it is fatal to the conquered. The French troops had acquired a great superiority over the Germans.

"Germany was not entered by two lines of operations, since the Pusterthal is on this side of the crest of the Alps, and as soon as Joubert had passed Lienz, the line of operation was that of Villach and Pontebba. Junction of the two corps was not made in front of the enemy, for when Joubert left Brixen to move to the right, upon Spittal by the Pusterthal or the valley of the Drave, the main army had arrived at Klagenfurt, and had patrols as far as Lienz. The Archduke, then, could devise no manœuvre to prevent this junction. Joubert, up to the time of the battle of Tagliamento, remained upon the defensive. After this battle he attacked, beat, and destroyed the greater part of Davidovich's corps, and threw it back beyond the Brenner; all this without risk, since, had he been beaten, he would simply have fallen back from position to position into Italy. When he learned that the army had passed the Julian Alps and the Drave, he made his junction movement by way of the Pusterthal, which was also without inconvenience. This operation, rapidly executed, was indeed conformable to all rules; it should have had, and indeed did have, every kind of advantage."

Contemporaneous wars offer us as striking examples of the application of the principles under consideration.

In 1870, we see that the I. and II. German Armies, once concentrated, marched upon a single line of operations, and even adopted a zone so confined that the lines of their corps cantonments sometimes overlapped one another. They took for their objective point the right wing of the masses assembled at Metz, then the communications of the latter upon Verdun, and marched upon these to bring the adversary to action.

After the great battles of August, the III. Army and the Army of the Meuse, *en route* for Paris, followed the general direction Nancy-Paris, and, notwithstanding the absence of the enemy, refrained from taking distinct

lines of operations. It was the same in their march from Argonne to the Meuse, and also when, after Sedan, they again turned toward Paris.

As much can not be said for our side. At Coulmiers, the forces of General Von der Tann succeeded in effecting their retreat upon Artenay, because our army, notwithstanding the protests of its commander-in-chief, was obliged to take the offensive upon a double line of operations. As a result of this, one of our masses, that under General d'Aurelle, was engaged alone, while the corps of General d'Pallières arrived too late to take part in the general action.

Success none the less crowned the efforts of our young troops, and the patriotic enthusiasm which followed this, did not allow any account to be made of the error committed.

At this period, we had two objectives: first, the armies covering the siege of Paris, then the army of investment itself.

A single advantage remained on the side of the Government of National Defense—the numerical superiority of our masses.

This would have been of great value had it been accompanied by cohesion and unity of action. The importance of this proviso becomes the more striking, when we consider that our contingents, raised and organized in haste, poorly equipped and supplied, were, notwithstanding their will, their devotion and their patriotism, powerless to obtain any definite result, unless brought together in large numbers and well supported. (*See Plate XI.*)

This was well understood, and yet, after the battle of Loigny and the retreat from Orleans, we saw the Army of the Loire divided into two masses, with distinct lines of operations, one running toward the east, the other toward the west.

At the same period, the Army of the North followed still another isolated line.

What could result from the separation of these forces and the enterprises undertaken by them? Let General Chanzy inform us. On the 30th of December, 1870, he wrote to the Minister of War:

"I thank you for the information concerning the operations about to be undertaken by General Bourbaki. I wait with impatience to learn the progress of his movement and what forces of the enemy will be detached against him. I should like also to be informed concerning General Faidherbe's actual situation, and of his plan for the future.

"Our greatest chance of success resides in the combination of our movements, in the simultaneous co-operation of the three armies to the same end, in a common effort made at the same moment. Without this, we may expect to see successively beaten the forces which, if well directed, might bring us victory. I earnestly request, then, that you give me at once all information in this regard that may be in your possession."

Three days later he sent to the Minister of War a general plan of operations, formulating his views.

"The situation," said he, "appears to me to be as follows:

"Around Paris, a powerful army, which resists all efforts made to break the investment; in the North, General Manteuffel, strong enough to threaten Havre while holding General Faidherbe's troops in check; in the East, the enemy's forces distributed from Paris to the Rhine, to cover his lines of operations, with groups sufficiently large to successfully oppose our troops upon the left bank of the Saône, and to offer resistance to the march of the 1st Army; in the South, the enemy strongly occupying Orleans, and yet so numerous in the valley of the Loire, from Blois to Gien, as to be a

menace to Bourges, Tours, and Nevers, and to trouble us upon the Loir, and on the side of Le Mans, should we quit these positions without leaving a force capable of defending them; in the West, a Prussian army, comprehending that an effort is to be made by us toward Paris, and establishing itself strongly upon the line of the Eure, in order to parry this blow, while beating the country around Chartres, to keep up its communications with the army on the Loire.

"Disposed as he is, the enemy evidently seeks to present himself successively, and in force, before each of our armies. He manœuvres very skillfully. We are generally very poorly informed about his important movements, which he dexterously covers with a screen of troops; and the only means of frustrating the combinations which up to the present have so often been successful, is to threaten all points in our turn, forcing him thus to make face in all directions, and no longer allowing him to present sufficiently large masses upon a single point to crush us in detail.

"It appears to me indispensable that the 1st and 2d Armies, and that under General Faidherbe, should begin operations at the very same time; the 2d Army from Le Mans, to establish itself upon the Eure between Evreux and Chartres, covering its base and its lines of operations, which are Brittany and the railroad lines from Alençon to Dreux, and from Le Mans to Chartres; the 1st Army from Châtillon-sur-Seine to take position between the Marne and the Seine, from Nogent to Chateau-Thierry, using Burgundy, the Seine, the Aube, and the Marne for its base and lines of operations; the Army of the North, from Arras, to establish itself from Compiègne to Beauvais, with its base of operations upon the places of the North, and its principal line, the railroad from Paris to Lille.

"In addition to these three main operations, and to

support them, the forces of Cherbourg should advance along the railroad from Caen, as far as the left of the 2d Army, having their lines of retreat always assured upon Carentan. There would then be:

"The forces in Brittany and upon the lower Loire, strongly occupying the Sarthe from Alençon to Le Mans, and the Perche to the Loir, to assure the rear of the 2d Army; the two volunteer corps under Cathelineau and Lipowski, behind the Loir and Chateaudun to cover the right wing of this same army, and to observe the enemy's troops in the valley of the Loire; the 15th Corps, without uncovering Bourges, and while successively threatening Blois, Orleans, and Gien, to take position between the Cher and the Loire to hold in check the enemy's corps upon the latter river, and in case the adversary should fall back, to march resolutely upon Étampes.

"Finally, the Army of Lyons, replaced in the positions which it now occupies by troops drawn from the South, holding Werder's army in check with the assistance of Garibaldi's forces and the corps in the East.

"Our three principal armies, once in the positions indicated, would place themselves in communication with Paris, and then combine in daily efforts to draw nearer the common objective, assisted by vigorous sorties on the part of the army of Paris, to oblige the enemy's investing army to remain entirely within its lines. The result will then depend upon the success of one of the exterior attacks; and if this success is assured, if the investment can be broken upon one point, the revictualing of Paris becomes possible, the enemy is thrown back and obliged to abandon a part of his lines, and new efforts, concerted between the exterior and interior armies, may, in the supreme conflict, secure our deliverance."

The general idea of the project no doubt responded to the necessities of the moment; but the details of application were open to question.

The combination may be summed up thus: To hold in check, by detached corps, the German armies of observation, and to act simultaneously with the three principal armies from the north, east, and west, against the army of investment. But this was yet to be effected upon three distinct exterior lines of operations. This was to play a part very acceptable to the enemy, and to offer him an opportunity of successively crushing each of our groups. Concert of action during the attacks was surely a practical idea; but the directions given them violated this principle: *Forces having the same objective should make use of but a single line of operations.*

In 1878, it was the same. The Turks, unable to give a common aim to their movements, adopted three distinct lines of operations; one from Viddin upon the Vid; the second, from Adrianople and the Maritza upon the Balkans; the third, from the Quadrilateral toward the centre of Bulgaria. The Russians, on the contrary, with a strong disposition, on another account, to allow themselves to be carried away in the direction of Constantinople, took only a single route, which was to conduct them from Sistova to Adrianople. The result was, that the Turks, without cohesion in their efforts, came into contact with superior forces at all points, and that in spite of the signal bravery displayed, their efforts could not prevent the scale of victory from inclining to the side of the adversary.

The necessity of a single line of operations is then clearly demonstrated. And after the numerous illustrations which precede, we must acknowledge the truth of the conclusions so often expressed in this regard by the highest military authorities.

We can then say with Jomini:

"*The art of arranging the lines of operations in the most advantageous way, is one of the essentials of the science of war.*

"*With equal forces, upon the same frontier, a simple line of operations should have the advantage over a double line.*

"The formation of two independent armies upon the same frontier should therefore always be avoided."*

Napoleon was not less explicit in saying: "To invade a country with a double line of operations, is a faulty combination."

And again he says: "When two parts of an army operate by lines widely separated from each other, and without communications, an error is committed which ordinarily leads to a second."†

Strategic Envelopment.—Notwithstanding the dangers attending the employment of double lines of operations, they are frequently adopted. This arises from the facility which they afford of realizing the idea, always seductive, of strategic envelopment. Moreover, certain circumstances sometimes permit the selection of two lines without the usual risks. This is the case when one of the belligerents is very greatly superior to the other, and when his two armies can advance without breaking their connection, though following divergent directions.

In manœuvering large modern armies, or more particularly groups of three or four armies, the march front will often be too extended to allow the use of but a single line of operations.

The important consideration in this case will be the maintenance of constant connection between the armies.

The history of modern wars offers us frequent examples of strategic envelopment. Our army unfortunately, in 1870, had to submit, in this regard, to the most woful experience.

This manœuvre is especially characteristic of the

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* *Treatise on Grand Operations.*

† *Commentaries of Napoleon,* Volume I.

operations of the German armies; but generally they succeed in it only through great superiority of forces.

The combination indicated by experience as the most feasible to be adopted against an enemy attempting a strategic envelopment, is *to take the most vigorous offensive, both strategical and tactical*, against his weaker force.

In case of an enforced defensive, the use of double operating lines on the part of the adversary, leads to the occupation of a central position. But it will always be dangerous to await the enemy there, for the army then remains passively upon the defensive, and is almost necessarily dedicated to disaster. The central position should, on the contrary, be turned to account to assail *en masse* the most exposed fraction of the enemy's force.

Manœuvres from central positions, moreover, belong to the order of combinations giving rise to the employment of interior lines.

(*c*) INTERIOR LINES.

The campaign of 1796 in Germany has clearly shown the dangers attending the use of a double line of operations. In presence of an active and resolute enemy, the army adopting it, is exposed to the risk of seeing each of its parts successively overpowered before the other can come to its aid.

The adversary's line is then called the *interior line*, while the lines of the opposing army are *exterior lines*.

It was the employment of interior lines which gave to Napoleon's genius its most brilliant *éclat*, notably in 1796 and 1814. We may define these lines as *the communicating ways which most directly join the different parts of the theatre of operations*.

They permit an army to move upon any point whatever of this theatre by the shortest route, and thus to

take swift advantage of the division of the enemy's forces, or even to provoke this division, in order to draw thence the greatest possible advantages.

The possession of interior lines is, then, of great importance, but it has led to success only on certain conditions, which may be stated thus:

1st. *Always manœuvre offensively and in force;*

2d. Take the offensive upon only one point at a time.*

It is certain, indeed, that if an army passively awaits its adversary, the latter will assemble his troops, choose his point of attack, secure a numerical superiority, and succeed either in driving it into a dangerous position or surrounding it.

On the other hand, in attacking at several points, an army is weak everywhere.

It is strong, then, only when engaging with all its disposable forces upon a single point, choosing well its point of attack, and remaining on the defensive everywhere else. Such were the combinations of the Archduke Charles and Bonaparte in 1796.

Few campaigns, moreover, have so forcibly illustrated these principles. The operations of Bonaparte are too well known to render an extended description necessary. A short *résumé* will be sufficient to recall their general scope.

Campaign of 1796 in Italy.—In March, the French army, barely 42,000 strong, spread out upon a line of cantonments extending from the Col di Tinda to Savona, had before it the Piedmontese and Austrian armies. Bonaparte's aim was to divide these forces, and separately overwhelm them. He thus explained the situation in the plan of campaign addressed to the Directory on the 19th of January. (*See Plate XII.*)

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* *Maxims of Napoleon*, by A. G.

"The operation to be undertaken," said he, "is simple. Are the Piedmontese alone? March upon them by Garressio, Bagnasco, la Solta, Castelnuovo, and Montezemolo. Having beaten them, and forced the intrenched camp, lay siege to Ceva.

"Have the Austrians the good sense to unite at Montezemolo with the Piedmontese? Separate them by marching upon Alessandria; and as soon as the separation is effected, give twenty-four hours to the seizure of the intrenched camp at Ceva.

"Once this camp is occupied by us, double forces will be required to compel us to raise the siege of the fortress."

The armies which were opposed to us were united, it is true, but upon an extended front; and by making a demonstration upon Genoa, Bonaparte succeeded in drawing Beaulieu thither, while Colli guarded the valleys of Piedmont. The centre was thus weakened. Here Bonaparte struck his blow, assailed the corps of his enemies with superior forces, gained the victories of Montenotte, Millesimo, and Dego, and from this moment forced his adversaries to adopt two exterior lines of operations: one towards Turin, for the Piedmontese; the other in the direction of Milan, for the Austrians.

The first anticipated result was attained: Bonaparte had divided his enemies. Then, far from relaxing his activity, he continued his offensive upon an interior line of operations, at first against the weaker and nearer adversary, Colli, whom he defeated at Mondovi, and whom he soon detached from Austria, forcing him to accept the armistice of Cherasco.

Turning then against Beaulieu, he pushed him beyond the Po, thence upon the Mincio, and finally into Tyrol.

To draw from this campaign the noteworthy instruction which it embodies, we should know how the victor himself regarded it some years later:

"But the Piedmontese army, under orders of Colli, instead of moving upon Millesimo, should have supported itself upon Dego to form Beaulieu's left. It was an error to suppose that, in order to cover Turin, Colli must station himself directly upon the road to that city. The united armies at Dego would have covered Milan, because they would have been astride the high-road of Montferrat; they would have covered Turin, because they would then have been near the road to that place. If Beaulieu had had five or six days in which to recall his left, it would have been expedient to march upon Ceva, in order to form a junction with the Piedmontese army, because it was more advantageous for the Allies to keep near the line of operations of the French. There was no fear that the latter would enter Montferrat so long as the enemy held an army at Ceva. United, the two forces would have been superior to the French army; separated, they were lost.

"General Beaulieu wished to defend the Mincio by a cordon. This system is the worst that can be adopted for defense. It was only the month of May; he should have occupied the Serraglio with his entire army; he could have remained there seventy days without any fear of sickness. He left 13,000 men in garrison at Mantua, and he had 26,000 men upon the Mincio; he would then have been able to bring together 40,000 men, that is to say, an army superior to the French, in a position as formidable as the Serraglio; and he would have maintained his communications with Modena and lower Italy."

Some weeks later, in July, Bonaparte was besieging Mantua, when Austria directed a new army against him, commanded by Würmser. (*See Plate XIII.*) We had then 15,000 men before the place. These were covered by a corps of observation 26,000 strong, having its right at Legnago, its centre at Verona and Rivoli, its left

toward Salo. Holding the lines of the Adige and Mincio, Napoleon controlled the outlets of the Trentin and the Friuli. Würmser having arrived at Trent in the middle of July, reorganized there an army of 60,000 men, with reinforcements drawn from the interior of the empire. Then, relying upon his numerical superiority, he resolved to envelop his adversary, adopting two distinct lines of operations. On the left, Davidovich was to descend the left bank of the Adige; in the centre, Würmser calculated upon advancing between the Adige and Lake Garda upon the positions around Montebaldo. These two masses were to follow the same direction. Finally, on the right, Quasdanovich, with 28 battalions, 17 squadrons, and 24 pieces of reserve artillery, was to move down the west side of Lake Garda, and debouch upon Brescia, to threaten our communications. Between him and Würmser was a space of 10 or 12 leagues, cut up by impassable obstacles.

The movement commenced July 29, and our supporting troops, assailed upon different points by very superior forces, fell back. Brescia was occupied by the enemy. Bonaparte found himself in a critical position. Hesitating for a moment, he called a council of war to collect the advice of his generals. But the same day, by an inspiration of genius, he divined that the enemy, in descending from Tyrol to Brescia and the Adige, was following two exterior lines, leaving him master of the interior line of the Mincio. Too weak to make head against the two Austrian masses, he yet had sufficient resources to beat each of them separately.

But for this, it was essential to bring together all his forces; that is to say, raise the siege of Mantua, recross the Mincio, and resolutely take the offensive against the feebler hostile mass. In twenty-four hours, the combination was arranged, dispatched to his lieutenants, and put into execution.

His first effort was directed against Quasdanovich, who was beaten at Lonato and Salo and thrown back upon Riva. By the 4th of August, Bonaparte was disembarrassed of this adversary.

These successes decided Würmser to quit Mantua, which he had entered as a liberator, and to march toward Goïto to meet us. But his army, deprived of the corps of Quasdanovich, of a division which was besieging Peschiera, and finally of the detachments left at Mantua and upon the banks of the Po, numbered only 25,000 men. Attacked in front by Bonaparte at Castiglione, and turned upon its left by the Serrurier division, which the retreat of Quasdanovich had freed, it was completely defeated. Its commander, fearing the loss of his communications with the valley of the Adige, fell back upon Tyrol, leaving 15,000 fresh troops at Mantua.

This battle was completed by the combats of Montebaldo, Corona, Preabocco, and Rocca-d'Anfo, in consequence of which our victorious soldiers were able to retake their former positions.

Napoleon has passed judgment upon this second part of the campaign with an authoritativeness which leaves place for no other exposition.

"Würmser's plan, in August, was defective; his three corps, one under his own immediate orders, the second under Quasdanovich, the third under Davidovich, were separated by two large rivers, the Adige and the Mincio, several mountain-chains, and Lake Garda.

"Würmser ought:

"Either to have debouched with all his forces between Lake Garda and the Adige, seized the Rivoli plateau, and drawn to him his artillery at Incanale; 70,000 to 80,000 men thus posted, with their right upon Lake Garda and their left upon the Adige, on a front of three leagues, would have overawed the French army, which, numbering hardly 30,000 combatants, could not have made head against them.

"Or to have advanced, with his united army, by the Chiese, upon Brescia, the artillery being able to move here.

"In the execution of his plan, he committed an error which cost him dear: he wasted two days in marching to Mantua. He should, on the contrary, have thrown two bridges over the Mincio, within cannon range of Peschiera, hastily crossed this river, joined his right at Lonato, Desenzano, and Salo, and thus by rapidly uniting his divided forces, have repaired the defects of his plan.

"To operate by widely separated lines and without intercommunication, is a fault which usually leads to the commission of a second. The detached column has orders for the first day only; its operations for the second day depend upon the progress of the principal column; either it loses time to await orders, or it acts at random. In the case under consideration, Würmser should have avoided this inconvenience by giving Quasdanovich orders not only to debouch upon Brescia, but also upon Mantua; and he himself should have moved upon this fortified place with the principal corps at a single bound. Quasdanovich would have reached Mantua if he had not delayed at Brescia; he would have raised the siege, found protection behind the ramparts of this place, and supplied himself from its magazines. Junction could then have been made with his army at a fixed point, sheltered from the vicissitudes of the campaign. If Würmser had been beaten before reaching Mantua, Quasdanovich would none the less have insured the revictualing of the garrison; he could have occupied the Serraglio for a long time, and, lastly, have guided himself by circumstances.

"It is then a principle that an army should keep all its columns united in such a way that the enemy can not break in between them. When, for any reason, this

principle is violated, the detached corps should be independent in their operations; and in order to form a junction, should move upon a previously-determined point, advancing without hesitation, and without new orders, thus avoiding exposure to separate attack."

In the latter part of August, 1796, the Imperial army began to reform around Trent. It still had 40,000 men, a force superior to Bonaparte's. Würmser made dispositions to continue the campaign, and drew up a new plan which was to conform to the aim had in view by the Vienna cabinet—the deliverance of Mantua. (*See Plate XIV.*)

According to this plan, Davidovich was to remain in Tyrol with 7,000 or 8,000 Tyrolese militia, and a corps of 20,000 men divided into four separate commands, very strangely posted.

One of these, 3,500 strong, under Groeffer, was charged with covering Upper Tyrol on the side of Vorarlberg; General Landon, with 3,000 men, observed the outlets of the Valteline; the division of the Prince of Reuss, 5,500 strong, was established to the north of Lake Garda; and finally, the Wukassovich and Sporck brigades, united in the valley of Roveredo, formed the principal force, about 8,000 strong.

Thus divided, this mass was in no condition to concur in Würmser's operations. Its action could only be defensive, and was beyond the sphere of his movements.

He, on his side, calculated upon descending on Mantua by the valley of the Brenta, Bassano, and Legnago, with 26,000 men in three divisions, while Davidovich debouched from Tyrol by the valley of the Adige, to threaten our communications and force us to abandon the line of the Mincio. The movement began in the first days of September.

Würmser again adopted two lines of operations, separated by the group of the Lessini mountains.

Bonaparte, immediately grasping the advantages which his position on the Adige gave him, advanced upon an interior line, directing himself first against the detachments of Davidovich. The latter were quickly dispersed in the combats of San Marco and Mori. Beaten again, on the 4th of September, at Roveredo, they were thrown back as far as Trent, then beyond Lavis, and were finally forced to retreat to Neumarkt.

From this moment Davidovich was out of the field. Without hesitating, Bonaparte then hastened into the valley of the Brenta, upon the rear of Würmser, who was at Bassano, and who had just detached General Mezzaros' division upon Verona. Attacking his adversary in force, on September 8, Bonaparte drove him from Bassano, separated him from Quasdanovich, who was compelled to retire into Friuli, and threw him back upon Vicenza and Legnago, leaving him barely 10,000 men.

To complete his success, Bonaparte attempted further to cut him from Mantua; but a fortunate circumstance saved Würmser, and permitted him to reach this stronghold, before which, at St. George, he thought it incumbent upon him to deliver a last battle. This was an added misfortune for him. Again vanquished, he had no alternative but to shut himself up in the place he had come to deliver.

Napoleon passed the following judgment upon this campaign:

"In the beginning of September, Würmser set out for the Bassano district, with 30,000 men, leaving Davidovich in Tyrol with an equal number. He should have foreseen the case of the French debouching into Tyrol, and consequently have prescribed to Davidovich not to receive battle at Roveredo, but to fall back upon Bassano, in order to meet the French with united forces; the Tyrolese militia were sufficient to observe the val-

ley of the Avicio. Or he might have endeavored to bring on the battle in Tyrol, withdrawing Davidovich upon Calliano and the valley of the Avicio. Marco, Mori, and Roveredo are good positions; but against impetuous troops, their advantages cannot compensate for lack of numbers. In all combats in mountain-passes, the columns, once broken, are thrown into confusion upon each other, and fall into the power of the enemy.

"It was too late when Würmser conceived the project of sending the Mezzaros division to Verona. This movement had been foreseen; Kilmaine was there with a small corps of observation. Würmser would have done better to have kept this division at Bassano, to support the other two. But, finally, since he wished to operate upon Mantua with a portion of his troops, he should have given this division 2,000 cavalry, 30 pieces of artillery, and bridge equipage; have directed it not upon Verona but upon Albaredo, where the Adige could have been bridged, and Mantua thus speedily reached. The blockade of the place would have been raised, the French rear disturbed, and even Verona itself attacked from behind. The garrison of Mantua thus reinforced could, for a long time, have controlled the events of the campaign. The Marshal might then have retired from Bassano with his other two divisions, his parks, and his staff, upon the Piave. The French army in this case would have been obliged to hold the valley of the Avicio by its left, in advance of Trent; its centre would have rested upon the Piave, in order to oppose the enemy's principal corps, and, lastly, it would have had to hasten along its line of communications to re-establish the blockade of Mantua. This was a great deal for a small army, and might have given rise to a change of fortune.

Würmser's march to the Adige, with his remaining

force of 16,000, was a necessity, He should here have been hemmed in, driven upon the river, and forced to lay down his arms, on account of the lack of bridge material, his bridge equipage and his reserve parks having been captured at Bassano. It was only through the blunder of a chief of battalion who evacuated Legnago, that he had the good fortune to reach Mantua.

"The Marshal, inaptly, left 1,800 men and several batteries in Legnago; retreat was no longer possible in the direction of the Adige, on account of the presence of the entire French army; he had to gain Mantua; if this was not possible, it was easier to reach Milan than to return to Legnago. He weakened himself and sacrificed his troops to no purpose.

"He was equally in error when he risked the battle of St. George; it would have been more advisable to have maintained himself in the Serraglio, which is the true battle-field for the garrisons of Mantua, when they are strong.

"The Marshal could also while still master of the Serraglio, have crossed the Po, with all his cavalry, several battalions of grenadiers and a few well equipped batteries, descended the right bank, recrossed this river and the lower Adige, and gained Padua. The French general would have learned of this operation too late to oppose it. Würmser would thus have preserved all his cavalry, a great part of his artillery, and his entire headquarters, and maintained the honor of the Austrian arms."

The other attempts made the same year by the Austrians to save Mantua, gave rise to combinations more remarkable still. They are presented here in a few words:

Alvinzi succeeded Würmser in the middle of October, and, following the latter's example, debouched by the Brenta with 40,000 men, while Davidovich descended

by the valley of the Adige with a force of 20,000 men. Favored this time by a marked numerical superiority, and by the fatigues which began to tell upon our troops, the two Austrian generals nearly succeeded in joining forces at Verona. But Bonaparte, profiting again by the mistakes of his adversaries, and manœuvring upon an interior line, defeated Alvinzi at Arcola, and obliged him to retreat; then, turning upon Davidovich, routed him and threw him back into Tyrol.

Napoleon afterwards wrote upon this subject:

"Nothing could have been more faulty than Alvinzi's plan. To remedy it, as soon as he had become master of Bassano, and Davidovich of Trent, he should have called the latter to him at Bassano by the valley of the Brenta, leaving the Tyrolese militia around Trent, and have presented himself upon the Adige with a united army."

In expressing himself thus, Napoleon confirmed a double principle: that of *the unity of the line of operations*, and of *the concentration of forces before battle.*

However, the defeat of Alvinzi was not to put a term to the efforts of the Viennese cabinet. Never, up to this time, had it thrown so much energy and activity into its preparations, and, by the end of the year 1796, Alvinzi was in a condition to resume the offensive with 40,000 men. But, as in the first instance, he formed a plan which divided his forces and gave rise to two separate lines of operations.

His design was to advance with his centre and right between the Adige and Lake Garda, for the purpose of assailing us in the neighborhood of Rivoli, while General Provera, with a corps of 20,000 men, was to move by way of Padua and Legnago, upon Mantua, and direct a division from Bassano upon Verona.

The movement commenced January 7, 1797.

The successive attacks of the Austrian armies, always

beaten and yet always re-organized, ended by placing Bonaparte in a critical situation, the more so as the Directory, jealous of his successes, concerned itself but little with replacing his losses, Nevertheless he did not waste an instant in making ready to face this new storm. The events now preparing, were to be the most glorious of the campaign, assuring immortal renown to those who distinguished themselves in it.

Bonaparte was at Bologna when he learned of the attack of the Austrians. Leaving a simple detachment before Provera, he proceeded at first to Verona, to secure information and judge of the situation. There he learned that Joubert, strongly assailed at Corona, had been forced to fall back. He immediately divined the new error committed by his adversaries, and understood that their principal mass was at Rivoli, since Joubert had been repulsed. He hastened to this point with all the forces that could be assembled, and succeeded, by tactical dispositions as remarkable as his combinations, in inflicting a complete defeat upon Alvinzi.

Returning then upon Provera, he surrounded him, and obliged him to capitulate under the walls of Mantua.

The fall of this place was soon to crown the successes of our army of Italy.

Again, the defects of Alvinzi's plan had given to Bonaparte one of his most brilliant triumphs. Again the latter had manœuvred upon an interior line of operations, while his enemies followed two exterior lines. Nor was this their only mistake. They made their principal attack in a mountainous region abounding in strong positions favorable for defense, while upon the lower Adige they would have deprived the French of this advantage.

Moreover, the march of Provera's corps could have led to no profitable result. A victory for Alvinzi at Rivoli would have sufficed, indeed, to save Mantua; his

defeat, on the contrary, made certain the loss of Provera, without the possibility of bringing any advantage in return.

The direction which the Austrians should have followed was quite plain. It was that which Prince Eugene adopted against Catinat in 1701, and which Napoleon himself, indeed, afterwards pointed out in referring to the march of Würmser upon the Brenta. They ought then to have left only a detachment at the entrance to Tyrol, and have debouched upon the lower Adige with the entire army.

This second movement of Alvinzi has, like the preceding operations, been reviewed by the victor himself in these terms:

"Alvinzi took the field in January, 1797. Mantua was severely pressed. He operated with two forces: the first, commanded by himself in person, moved upon Montebaldo; the other, under Provera, marched by way of the lower Adige. Had the latter succeeded, his victory would have been without result, in case of Alvinzi's defeat. The defects in the plan of campaign were aggravated by connecting the two attacks with a central movement upon Verona, which was purposeless, and had the effect of weakening the principal attacks without uniting them, since the situation of the forces rendered this impossible. It is true that the orders from Vienna were that, if Alvinzi should be beaten and Provera succeed in raising the siege of Mantua, Würmser was to cross the Po with the garrison from this place, and retire upon Rome; but unless the coöperation of the King of Naples could be assured, which was by no means certain, this could give no advantage.

"Provera, after having captured by surprise the passages of the Adige at Angiari, should have crossed to the right bank with his entire corps, including Bayalisch's division, removed his bridge, and proceeded to Mantua,

his only place of refuge. He would have arrived there with 20,000 men. Instead of this, he saved only 8,000, because he had left the Bayalisch division to the right, 2,000 men to guard his bridge, all of whom were made prisoners, and because, having lost time, his advanced-guard was overwhelmed."

Near the end of his career, Napoleon again had an opportunity to apply, in a brilliant manner, the principles which had so often led him to victory. In 1814, it was the employment of a central position and an interior line of operations which gained him the signal successes of Champaubert, Montmirail, Vauchamps, Villeneuve-les-Bordes, and Montereau. But it would require too much space to describe these operations here. The preceding campaigns have sufficiently set forth the advantages which the possession of an interior line assured to armies at the commencement of the century. It remains to examine whether the principle holds good to-day; whether the powerful masses which modern nations put in motion are in an identical situation; and whether the ideas of the past are still capable of being applied to the same advantage.

In this connection the campaign in Bohemia offers us valuable instruction.

(*d*) LINES OF OPERATIONS OF THE BELLIGERENT ARMIES IN 1866. (*See Plate XV.*)

At the commencement of their movements against the Austrians, the Prussians adopted two distinct lines of operations.

The I. and II. Armies entered Bohemia by two converging lines which were entirely separate, and for some days without lateral communications. The I. Army advanced by Görlitz, Reichenberg, Münchengraetz, and Gitschin; the II. by Neisse, and Koeniginhof upon Gitschin.

If the Austrians had been concentrated upon the Elbe, at this moment, they would have occupied an interior line, and been in a situation to successively attack the enemy's armies with superior forces.

Von Moltke, in settling upon the directions of his first marches, left Benedek, then, a most favorable opportunity. Although the latter did not profit by it, the fact has none the less given rise to lively criticisms. The chief of the Prussian general staff has not hesitated to recognize their justness. He has, however, defended himself in these terms:

"How came it that we did not meet with more serious resistance in debouching from the mountains of Lusatia? We must search for the reason in the dispositions made by the Austrians.

"Up to the present, it has been impossible to learn anything positive of Field Marshal Benedek's plan of campaign. If we accept what is said by the military journals, we must conclude that he intended to bring together the bulk of his forces upon the right bank of the upper Elbe, in the vicinity of Josephstadt and Koeniginhof. Thus placed, the Austrian army would have been on a central line of operations between the two Prussian armies. With relatively weak forces, it could have defended the deep cuts formed by the Iser or the Elbe, chosing one or the other according as it was desirable to bring superior forces against the Crown Prince or Prince Frederick Charles.

"It seems that the Field-Marshal never lost sight of this project, which surely was excellent in itself, and which he set to work to execute with the inflexible pertinacity characteristic of this remarkable warrior; but it remains to be seen if this project still held good at the moment when its adoption was under consideration—at the time when the Prussian armies were already in full movement.

"In order to profit from a central operating position, it is essential that the general there have sufficient freedom of action to permit him to go in search of one of his adversaries at a distance of several days' march, and enough time to allow him to return then upon the other. If the space be too restricted, he invites the danger of having to meet his two adversaries at once. When an army, on the battle-field, is attacked in front and upon the flank, its central line of operations will count for very little; what was an advantage in a strategical point of view, has become a disadvantage from a tactical standpoint. If the Prussians were permitted to advance to the Iser and the Elbe, if the few defiles which must be traversed in order to cross these obstacles were allowed to fall into their power, it is evident that it would be very perilous to advance between their two armies: in attacking one of them, there was danger of being attacked in the rear by the other.

"We have already said that the forces placed under command of Benedek were united in Moravia on the 10th of June; but the troops were so poorly equipped that they were obliged to remain there until the 17th."

This explanation of Field-Marshal Von Moltke may be epitomized thus:

1st. The Prussians were obliged to divide their forces in order to defend the two threatened parts of the kingdom.

2d. Circumstances required a concentration in three bodies upon three different points.

3d. The distances from Görlitz and Neisse to Gitschin, the point of reunion indicated to the two Prussian columns, are nearly the same as that from Gitschin to Olmütz, Benedek's point of concentration.

It resulted from this, then, that the Austrians had not the requisite space in which to engage one Prussian force without being attacked by the other.

The explanation given by the Prussian staff supposes that the three combatant armies are at their points of departure, that is to say, at Görlitz, Neisse, and Olmütz. Presented thus, the explanation is not open to debate. It shows, however, as has already been advanced, that if the Austrian forces had been assembled upon the Elbe, Benedek would have found himself in condition to have attacked one or the other of the opposing masses with a great numerical superiority.

But to justly estimate these facts, as well at least as it is possible to do at a somewhat distant time and place, it will be well to examine the details of the case more closely.

On June 27, 1866, the I. Army and the Army of the Elbe arrived at Münchengrætz. The II. Army marched into Bohemia: the I. Corps reached Trautenau; the Guard, Eypel and Costeletz; the V. Corps, Nachod; and the VI., Skalitz.

The Austrian army was for the most part assembled around Josephstadt.

Now from Josephstadt to Münchengrætz is a distance of about 70½ kilometres [about 44 miles], or three marches of from 23 or 24 kilometres; while from Josephstadt to Trautenau it is only 25 kilometres, that is to say one good march. From Trautenau to Eypel is a distance of 10 kilometres; from Trautenau to Nachod, 24 kilometres; from Trautenau to Münchengrætz, 66 kilometres, or three marches.

Consequently, on the 27th of June, the Austrian army was in position to assail the II. Prussian Army in force, especially the I. Corps and the Guard; on the 28th, it would have been able to attack the V. and VI. Corps under the same conditions, and it is certain that the I. Army and the Army of the Elbe, held at Münchengrætz by the Clam-Gallas Corps and the Saxon Corps, were too far distant to arrive in time upon the scene of action.

But to make this possible, it would have been necessary for Benedek to have divined the presence of the II. Army, and to have quickly formed the decision which the circumstances demanded.

This war offers us another example of the employment of an interior line of operations.

After the battle of Königgrätz, the Prussian General-Staff had to select anew the line of march for its principal mass.

The enemy was forming an army at Vienna, while the beaten corps fled toward Olmütz. There were thus two important Austrian groups. Von Moltke resolved to advance upon the line Pardubitz, Brünn, Lundenburg, Presburg, which permitted him to keep these groups divided and to overcome them separately.

The adoption of this interior line was not without influence upon the request for an armistice, made by Austria within less than a month after the decisive battle of Königgrätz.

In examining the strategic combinations which, in 1866, guided the movements of the Prussian army, one could foresee, in a certain measure, those of 1870. The latter offer peculiarities worthy of remark.

(*e*) LINES OF OPERATIONS IN 1870.

At the commencement of this campaign, the Prussian armies formed two grand masses, which had each a distinct line of operation. The I. and II. Armies advanced upon the line Mayence, Neunkirchen, Sarrebrück, while the III. Army had for its general direction, the Landau, Wissembourg, Haguenau line. Before the passage of the frontier, the connection between these forces was established by the corps near Kaiserslautern and Deux-Ponts, and by a cavalry regiment which had been directed upon Pirmasens.

But from the 4th to the 12th of August, during the

period of first combats, the connection ceased. The two grand armies were separated by the Vosges, with an interval between them of 38 kilometres, or about 2 marches. At one time, even, when they were both engaged, the one at Spicheren, the other at Froeschwiller, there was a distance of three marches between them; and this situation was aggravated by the fact that all the roads to the south of Bitche, which communicate between Lorraine and Alsace, were in our power. These armies, then, manœuvred upon two exterior lines, and it is not doubtful that a favorable occasion for making use of an interior line, at this time presented itself to the French army.

It would be an error to suppose that this circumstance escaped the attention of Von Moltke. He had well weighed the inconveniences of it, before hostilities. But with a superior insight and an exact acquaintance with the means of action of the two belligerents, he did not hesitate in his plan.

Here are the terms in which he expresses himself upon this subject:

"The plan of invasion on the part of the French, and the character of their railroad system having led them to group their armies into two principal masses, they were to effect a union by a march to the front.* Such a situation could not with safety be prolonged in presence of so enterprising an adversary; for the latter entering France by either the lower or the upper Sarre, equally threatened the retreat of the still intact wing of the army having its base in Lorraine, and could even bring about, as an ulterior consequence, the evacuation of the line of the Moselle.

"At the outset, the German armies were in direct contact with each other between the Nahe and the Lauter. When they took the initative, the enemy's position obliged them to advance in divergent direc-

tions. Now it is at this time that our situation in relation to the Vosges becomes apparent. It was necessary to cross this chain in order that one wing might be able to profit from the advantages gained by the other. But here was presented this essential difference in the situation of the two belligerents, that in case one of the German armies experienced a check, it would, at the worst, only be thrown back upon the others, while a German success would result in separating the French armies."

Scarcely had the III. Army crossed the Vosges range, when it inclined toward the II. Army in order to re-establish connection, and join it in taking up the line of the Moselle.

During this time, the group of the first two armies, marching from Spicheren upon our principal body, might have attempted to turn it by its left, and to pass the Moselle below Metz, cutting thus the Metz-Thionville line of defense, and threatening our communications. But in this case, the German armies would have manœuvred upon two exterior lines, leaving to us all the advantages of an interior line and a central position. This combination would have been faulty.

The German staff took care, then, not to adopt it, and decided upon the Pont-à-Mousson direction for the I. and II. Armies, in order to link to the III. Army, and form with it a single group of forces occupying an interior line of operations between our troops in Alsace, in retreat upon Châlons, and our army at Metz.

But it was especially at the end of August, 1870, that the lines of operations, pursued by the combatant forces, became of a nature to assure the success of one and the defeat of the other.

In taking a north-easterly direction, our Châlons army abandoned to the enemy all the advantages of interior lines, and, moreover, according as it advanced, uncov-

ered its communications. We were then manœuvring upon two exterior lines, the one from Metz toward the places of the North, the other from Châlons toward Sedan, while the group formed by the III. German Army, the Army of the Meuse, and the army of investment at Metz, operated upon an interior line.

It is certain that Metz should, at this stage, have been the objective of an army of succor; but the line of operations that appeared the most plainly pointed out, was that which, supporting itself upon the places of the East, and following the Vosges, reached to the Moselle, while threatening the enemy's communications.

(*f*) CONCLUSIONS.

It would be superfluous to cite other events of the last war, bearing upon lines of operations. The preceding observations suffice to demonstrate that the principles of the past preserve all of their importance, and that they may not with safety be violated.

They permit us to conclude also that the application of these principles has become more difficult, and that, through the increase in the effectives, lines of operations have to-day expanded into wide zones, embracing systems of parallel roads. But by reason of this very fact, it will perhaps occur more frequently than formerly, that the operating forces will find themselves separated for short periods by obstacles of the ground. At all events, the combinations which may lead to a division of the forces of the enemy, have evidently retained all their influence. Their scope, we see, is even extended, embracing larger fields of action, while more formidable agents of destruction, and armies at once more numerous and more powerful are employed.

The rules of action established in the past for the situations under discussion being likewise applicable in the present, we may very appropriately give them here

in the language of those military men who have studied them with the deepest attention.

Jomini says upon this subject:

"1st. It may happen that a double line becomes a necessity, either on account of the topographical configuration of the country, or because the enemy himself has taken a double line, and it becomes essential to oppose a part of the army to each of his masses.

"In this case, *interior lines should be taken, in order to have the power of concentrating more rapidly than the enemy, and of successively overcoming each of his separated parts.*

"A retarding force ought then to be left before one of the enemies' groups, with orders to fall back upon the main army.

"The campaign of 1814 presents remarkable applications of this principle.

"2d. A double line may sometimes be advisable when one side has such superiority as to give a warrant of ascendency on each line. In this case, it is necessary to reinforce the part of the army designed to play the most important rôle, and, if possible, proceed so that the two directions may be connected."*

During the wars of 1866 and 1870, the combinations of Von Moltke were often derived from the preceding principle. As, for example, after Sadowa, when he directed the Prussian armies upon Olmütz and Vienna. Such was also the case with the march of the two principal German masses at the commencement of the campaign of 1870.

"3d. Two interior forces, mutually supporting each other, should not, if facing two superior bodies, allow themselves to be drawn into too restricted a space."

Napoleon committed this error in 1813. The three

* *Treatise upon Grand Operations.*

masses which he thought to oppose to the grand armies of the Coalition, manœuvred upon interior lines; but in allowing themselves to be pressed together little by little, a day came when, at Leipsic, they were almost surrounded and overwhelmed under the blows of their adversaries, now become too numerous.

In January, 1871, it was the same imprudence, aggravated, it is true, by a peculiarly critical state of affairs, which forced our last army, that of the East, to retire into Switzerland.

"4th. Two concentric are better than two divergent lines. But in order that they may be exempt from danger, they should be so combined that the two armies traversing them may not separately encounter the united forces of the enemy, before being themselves in condition to effect their junction."*

The march of the Prussian armies at the end of June, 1866, offers a startling example of the violation of this principle. It is to be noted, moreover, that, in the future, its application will be more frequent and more necessary than formerly, by reason of the increased forces which will henceforth take the field. Consequently, the conditions of time and space which will permit the different armies to support one another, in case of a battle, or which will prevent such support, will have an extreme importance. The staffs will have a heavier responsibility in this regard; and more than ever will the echelon disposition for the march impose itself as an obligation, in order to provide against the dangers always attending a division of forces.

In terminating this statement of the principles relating to lines of operations, it will not be uninteresting to recall those which Napoleon has authoritatively laid down:

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* *Treatise on Grand Operations.*

"An army marching to the conquest of a country has its two wings protected by neutral territory or large natural obstacles, such as great rivers and mountain-chains; or it has only one of them so protected; or neither of them. In the first case, it has only to watch what takes place in its front; in the second, it should support itself upon the protected wing; and in the third, it should hold its different corps supported upon the centre, and never separate them; for if it is difficult to succeed with two unsupported flanks, this difficulty doubles when there are four flanks; trebles if there are six; and quadruples if there are eight: that is to say, if the army is divided into two, three, or four different parts. An army's line of operations, in the first instance, may support itself upon the left or the right, indifferently; in the second, it should rest upon the protected wing; in the third, it should be perpendicular to the marching front at the middle point. In every case, it is necessary to have strong places or fortified positions upon the line of operations, at intervals of five or six marches, where supplies of all kinds may be brought together and convoys organized. These places become centres of movement, new starting points whereby the line of operations may be shortened."

In reality, notwithstanding the extent of the developments to which they have given rise, the rules relating to lines of operations are simple and few in number. Abridged to include only the most important, they may be presented thus:

1st. The aim in selecting lines of operations should be *to direct upon decisive points a stronger force than the enemy is able to bring to bear;*

2d. *This selection depends upon the form of the bases, the configuration of the ground, and the positions of the enemy;*

3d. *Simple and interior lines of operations are always to be preferred;*

4th. *The most advantageous lines of operations are those which lead an army upon the enemy's communications without endangering its own.*

The preceding theories, all of which are the result of experience, should not, however, lead us to forget that the events of war, the nature of the countries traversed, the national spirit of the peoples, and finally the capacity and energy of the leaders, which so powerfully influence the results of a campaign, will never be submitted to fixed maxims nor to preconceived rules.

War will always be a passionate and bloody drama, not a mathematical operation.

IV. LINES OF COMMUNICATIONS.

Definitions.—Military men are not all of one opinion upon the manner of defining lines of communications.

For some, they are transversal directions which establish connection between the lines of march. For others, they are the lines of operations themselves. To the end that ideas may be precise upon the subject, we shall assume that *the lines of communications are the lines which connect armies with their magazines.*

They are, then, lines of retreat also.

Napoleon often deliberately confounded lines of operations with lines of communications. And yet the opinions and examples which he has given us for establishing the communications of an army still serve as models in many cases.

On January 12, 1806, having to send instructions to King Joseph on the subject of the command of the army directed upon Naples, he thus expressed himself:

"You ought to establish your communications, that is to say, your post and supply routes, in short, your line of communications, through Tuscany, and not in any sense through Ancona and the Abruzzi, because it is my desire that you act by way of Rome upon Naples."

Importance of Lines of Communications.—An army's line of communications is then the line connecting it with its source of supply. It follows, therefore, that it is still more important than its line of operations; for an army's first requisite is to live, and consequently to remain connected with the region whence are drawn its food, its munitions, its arms, and especially its soldiers. One of the characteristics of an army in the field is that it forms an organ of consumption and expense. It does not produce, at least from the moment it begins to act; it destroys and consumes. Its wants are constant, and increase at every step. On the day when these are no longer supplied, it ceases to act and loses its power.

This is why Napoleon has so often, in energetic terms, indicated the importance which he attributed to the preservation of this line.

On the 22d of September, 1808, responding to a plan of campaign proposed by King Joseph for operations in Spain, he wrote:

"The military art is one possessing principles which must not be violated. To change the line of operations,* is an undertaking which should be confined to men of genius; its loss is so serious an event as to render the author criminal. The preservation of the line of operations is then imperative, in order to avoid losing connection with the depot—the point of rendezvous, the magazine of supply, and the place where the wounded and sick may be sent.

"If, when holding Madrid, all the forces had been collected in the city, with the Retiro as a centre for hospitals and prisoners, and as a means of keeping down a large town and of preserving its resources—this might have been to lose the line of communication with France,

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**Military Correspondence.*—Napoleon intended here to speak of the line of communications.

but it would have assured the line of operations, especially if profit had been made of the opportunities to collect large quantities of provisions and munitions, and if there had been organized, at a distance of one or two marches upon the principal highways, as the citadel of Segovia, etc., places made to serve as points of support and observation for the divisions. But to shut one's self up in the interior of Spain at this time, without an organized centre or well-supplied magazines, exposed to the risk of having the enemy's armies on the flanks and rear, is to be guilty of a folly unexampled in the history of the world.

"When a garrison is besieged, it has lost its line of communications, but not its line of operations, because the latter extends from the glacis to the centre of the place, where the hospitals, magazines, and means of subsistence are collected. Is it beaten in a sortie? It rallies upon the glacis, and has three or four days in which to recruit the troops and restore their *morale*.

"According to the laws of war, every general who loses his line of communications deserves death. By the line of communications, I mean that line upon which are situated the hospitals, the war munitions, and the food, and upon which the army may be re-organized and recruited, and after a day or two of rest, recover its *morale*, shaken, it may be, by an unforeseen accident. It is not understood that the line of communications is lost when it is disturbed by guerrillas, by insurgent peasants, and in general, by what in war are termed partisans. These may stop couriers, and some of them may even cross the communications in spite of all precautions; but they are not in condition to make head against an advanced or a rear-guard; hence they are not worth considering. The line of communications is organized upon the principle that all should fall back upon Madrid. For this every-

thing should have been amassed at the Retiro,—munitions of war, provisions, etc.,—and in case of necessity, a large force could have been collected there in a few days. There is a great difference between operating with a system based upon an organized centre, and proceeding at the risk of losing the communications without having such a centre."

It results from the preceding, that one of the constant cares of the leader of an army should be the preservation of his communications.

But this does not signify that he should always retain the same line of communications. Circumstances may arise which oblige a change.

Changing Lines of Communications.—The letter written by Napoleon to his brother Joseph, in 1808, shows us that the successful accomplishment of this operation was in his eyes a stroke of genius. His campaigns offer us more than one example of this.

In 1805, when, after having passed the Danube at Vienna, he moved straight to the north, it might be thought that his line of communications passed through Vienna and extended thence to the Rhine by way of the depot places which he had organized upon the right bank of the Danube. In this situation, finding himself forced to turn to the right to attack the Russian army, he would have had his line of communications upon his right flank. This was a danger which he had foreseen and provided for. He had given orders that his line of retreat should pass through the bridge-head of Linz, which, with this in view, he had strongly organized, guarding it by the Bavarian and Würtemberg contingents. From Linz, this line extended on one side through Braunau and on the other through Passau and Ratisbon. It was by this last route that he counted upon retiring in case of repulse.

In an anonymous communication, published in 1806 in the *Moniteur Universel*, Napoleon shows that the Russians were under the impression that his line of communication was directed upon Vienna; that it was the hope of cutting it that induced them to move their forces between Brünn and Vienna, and to execute a false manœuvre and a flank march leading to their defeat at Austerlitz.

In 1806, the Prussian Staff resolved, in its turn, to cut the line of communications of our army. It supposed that this line ran through Mayence. Consequently it moved its advanced-guard upon Erfurt, and thence toward Frankfort.

Napoleon, indeed, had taken the necessary measures to lead his adversaries into this error, and to this end, had caused demonstrations to be made on the middle Rhine, at the very moment that he was massing his corps at the southern extremity of the Thuringian Forest. His communications were then directed from Kronach and Forcheim upon Strasburg, covered from the enterprises of the enemy.

When the Prussians discovered their error, their army was itself already turned, and had scarcely time to make a defense.

But it is to be noted that Napoleon, on the day following Jena, changed his line of communications and adopted the shorter, and, thenceforth, surer route through Erfurt, Fulda, and Mayence.

On October 16, 1806, he wrote to Berthier on the subject:

"Cousin, give orders to General Songis to collect at Erfurt all the artillery taken from the enemy; give orders to the Intendant General to assemble all supply magazines at Erfurt, which henceforth will be the pivot of the army's operations.

"General Songis will send to Erfurt the artillery

company which is now at Würzburg; he will call back to the army the half company which is at Kronach and the one at Forcheim.

"You will give orders to Marshal Mortier to move with the first division of his corps to Fulda, and establish his headquarters there, occupying the entire principality of Fulda as soon as possible.

"Order a *commissaire des guerres** to organize the route of the army upon Frankfort and Erfurt. The general in charge at Würzburg will proceed to Erfurt to take command of the citadel, the city itself, and the province. The general who is at Kronach will advance toward Saxony.

"The entire line of supply now running through Bamberg, will be removed to the line Erfurt, Fulda, Mayence.

"Give orders that all prisoners hereafter taken will be sent on to Erfurt. It is advisable to have a general staff office there for purposes of correspondence. Have a large military hospital established at that place."

These orders of Napoleon seem to contain, in the germ, the organization which has since been adopted by the Prussians. It was thus that after Jena, the city of Erfurt became the head of the supply line in place of Kronach. The service of the communications was placed under the orders of a division general, who left Würzburg and was installed at Erfurt. It was, moreover, assured by a special staff and a *commissaire des guerres*.

The most extraordinary example of a change of the lines of operations and communications, which the career of Napoleon offers us, is that conceived by him in 1814, but which events did not allow him time to carry into execution.

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*An officer combining the duties of provost-marshal, inspector, and paymaster;—afterwards replaced by the military intendant.—Tr.

Seeing that he would not be able with the feeble forces at his disposal, to struggle forever, single-handed, against the combined armies of Bohemia and Silesia, and counting, moreover, upon the resistance of Paris, he resolved to leave the road to the capital open to the enemy, assemble whatever troops he still had in the places of the East, rally his marshals with the remains of their corps, and march thus upon the rear of the allies. He would then have abandoned his line of communications upon Paris, to take a new one upon the Vosges and the places of the East.

He wrote to the Duke of Bassano the following note upon this subject:

"There are four courses open:

"1st. To leave here at two o'clock in the morning, reach Vitry by eight, and attack the enemy.

"2d. To set out early to-morrow morning and march, by way of Bar-sur-Ornain, upon Saint-Mihiel, so as to gain the bridge of Saint-Mihiel to-morrow; from this moment I open communications with Verdun, and assure the passage of the Meuse; I would go then to Pont-à-Mousson, securing communication with Metz; I would be reinforced by 12,000 men which I could draw from the fortified places; I would thus have chased beyond the Vosges, the corps now at Nancy, and could give battle based on Metz.

"3d. To move to-morrow upon Joineville and Chaumont, whence I would take my line upon Bar-sur-Aube and Troyes.

"4th. To march upon Brienne and Bar-sur-Aube; we would go by way of Vassy, and would almost reach Bar-sur-Aube to-morrow.

"The most reasonable of these projects appears to be that which rests my line upon Metz and my fortified places, and which brings the war near the frontiers."

If the Emperor had been able, as he intended, to base

himself upon the frontiers of Alsace and Lorraine, to effect a junction with Mortier and Marmont, and especially to bring together 50,000 men, his project would perhaps have still led to extraordinary results.

It is surprising to see how, at once taking into account the surrender of Paris, he ordered his communications to be changed anew, directing them upon Orleans.

Unfortunately he was too late, and the feeling of general exhaustion which prevailed, triumphed over his energy.

We may then conclude that:

1st. *An army should never compromise its line of communications;*

2d. *To change the line of communications is a difficult operation, but one which it is essential to execute whenever the security of the army demands it.*

How far are these principles applicable in our day? A study of the communications of armies during recent wars will determine the matter for us.

In this connection, the War of Secession demonstrated to what extent the progress of industry, especially the creation of railroads and telegraph lines, had modified the system of communications in the field. Although this war was carried on under circumstances of time and place bearing little analogy to those characterizing a European war, it will not be without profit to follow one of the grand movements which its history records, and to note what means were adopted to assure the communications. The importance of railroads as an agency of supply will first of all be shown, and this will prepare us to understand the rôle which they were called upon to play later in European wars.

Sherman's Campaign in Georgia in 1864.—In the beginning of 1864, Grant, then Commander-in-Chief of the Union armies, resolved to divide his forces into two principal

masses, in order to bring the war to a close as speedily as possible. One, under his own orders, was to operate against Richmond, the centre of the enemy's defence: the other intrusted to Sherman, was to set out from Tennesee, then in the hands of the Federals, seize Atlanta, in Georgia, and destroy the resources which this rich state and the Carolinas furnished the Confederates.

Sherman's line of operation followed the direction of the Tennessee-Georgia railroad, obliging him to cross the Oostanaula, Etowa, and Chattahoochee rivers, and to pass several mountain spurs, all of which obstacles were used by the enemy as so many lines of defence.

His army, a hundred thousand strong, comprising seven corps, was divided into three parts, as follows:

The *Army of the Ohio*, commanded by Schofield, reduced to a single corps of 15,000 men, was established on the upper Tennessee at Knoxville, and formed the left wing.

The *Army of the Cumberland*, under Thomas, 60,000 strong, divided into three corps, held Chattanooga.

The *Army of the Tennessee*, commanded by McPherson, numbering 25,000 men, in three corps, occupied Huntsville, near the Tennessee, to the north, and situated upon the Chattanooga-Memphis railroad.

Sherman possessed, in addition, 254 guns, and Stoneman's cavalry, comprising three divisions.

The Confederate army under Johnston, reduced to 60,000 men in three corps, was established in intrenched positions before Dalton, astride the Georgia-Tennessee railroad, and separated from the Federals by the mountains called Rocky-Face-Ridge.

Sherman commenced his movement during the first days of May, 1864. The Georgia-Tennessee railroad served both armies for line of operations and communications. It was of so much importance that from this time it became, so to say, the pivot and the objective of their operations. (*See Plate XVI.*)

Sherman not wishing to attack Johnston's strong positions in front, resolved to turn them by their left. He directed McPherson upon Resaca, eighteen miles to the south of Dalton, with orders to destroy the railroad there, and take a position upon the Confederate flank.

In the meantime, Schofield marched directly upon Dalton, and the rest of the army followed McPherson.

Johnston, fearing for his communications, hastened to defend the threatened point; but he was repulsed, and obliged to draw back to the line of the Etowa to the south of Cassville. Sherman, who up to this point had pursued him without relaxation, in the hope of taking him in the rear, was now alive to the necessity of giving his troops a few days' rest. He availed himself of the pause to repair the railroad and collect trains sufficient to carry twenty days' food and forage supply.

These dispositions made, he resumed the offensive. Johnston's position was strongly intrenched, and defended the dangerous defiles of Allatoona. Sherman again made a flank movement. While his rear-guard made demonstrations upon Cartersville, the remainder of his forces moved in three columns upon Dallas, to be able to wheel around from this point and cut the railroad in the enemy's rear.

Johnston immediately fell back, and vainly tried to retake Dallas; then seeing his adversary reseize the railroad and occupy in force, at Ackworth, the *débouchés* south of the defiles of Allatoona, he withdrew to Kenesaw Mountain.

Sherman saw, in leaving the railroad, how much his trains hampered his movements, and hastened to resume his natural line of communications. He established his magazines at places situated directly in his rear, fortified the approaches to them, and left detachments there, which were replaced by two divisions drawn from the 17th Corps.

On the 10th June, he marched upon Marietta, which Johnston had fortified, forced the latter to retreat upon Nose's Creek, and on the 26th attacked him vigorously. Johnston repulsed his assaults; but soon Sherman moved his main forces toward the Chattahoochee, obliging Johnston to retire to this stream, which he prepared to defend. Sherman having passed the river above the enemy, while his right made demonstrations in front, compelled the Confederates to retreat to Atlanta.

In thus continually menacing the railroad in the enemy's rear, Sherman had enlisted most favorable results. This manœuvre had so often brought him success that he prepared to resort to it again, after having collected fresh supplies at Allatoona, Marietta, and Vining. On the 18th July, he directed the commands of McPherson and Schofield upon the Atlanta-Augusta railroad, which they destroyed. Then these two parts of the army marched upon Atlanta, to assail it from the east, while Sherman himself threatened it from the north.

At this juncture, the Confederate government, without taking into account the talent displayed by Johnston, replaced him by Hood, one of his corps commanders. The latter gave orders for an offensive movement, to take place on the 20th July; but he was beaten, and his attempt had no other result than to permit the Federal army to draw its lines closer around Atlanta. Two days later the struggle recommenced, and, although very destructive to the Federals, who lost McPherson, it brought about no sensible change in the situation.

Sherman realized the difficulty of carrying the intrenchments of the enemy, without a siege, and returned to his customary tactics. Hood's only line of communications was the railroad to the south upon Macon, an important city of Georgia. Starting at East Point, a branch of this road ran to West Point and Montgomery, in Alabama.

Sherman directed the Army of the Tennessee to the right upon East Point, and his cavalry, by two different directions, upon Lovejoy, a station eighteen miles distant from Atlanta. This last movement did not succeed; each of the detachments was assailed by superior forces which were scouring the country. As to the Army of the Tennessee, attacked by Hood in its march of July 28, it inflicted upon him a defeat which thenceforth reduced him to the defensive. He, however, strove still to extricate himself, and to this end formed an important artillery and cavalry command, which, on the 18th August, was directed, under Wheeler, against the railroad by which Sherman was supplied. But the latter, unmoved by this, profited by the consequent weakening of Hood's forces, to complete the destruction of the railroads south of Atlanta. A short time after, on the 30th August, he moved the bulk of his troops in this direction, in such a manner as to completely cut all the communications of his adversary Hood attempted at Jonesboro' to prevent this operation; but not succeeding there, he abandoned Atlanta during the night of the 1st September, after having blown up the arsenal and powder magazines, and destroyed surplus supplies.

The first aim of this four months' campaign was attained. The victor at once, on the 2d September, established himself firmly in Atlanta, and made this place a base for new operations, which, however, were not yet fully decided upon. The month of September was spent in the work of reorganization and preparation. It was necessary as a stepping-stone to future action, to secure the line of communications, now very extended, reaching from Atlanta to the Tennessee. To this end a division of occupation was installed at Chattanooga, and another at Rome.

Sherman then ordered Atlanta evacuated by all not connected with the Federal forces.

At the end of September, hostilities recommenced with increased activity. The Confederates united in an effort to seize the Federal communications. Their cavalry, under Forrest, first made extensive raids into Tennessee and Alabama, and soon Hood's entire army moved in the same direction.

Sherman, who had divined their intentions, and reinforced his stations, at first started in pursuit of them, leaving a corps at Atlanta. He proceeded thus to within a short distance of the Tennessee, retracing his steps, and moving toward the army which he had established between Nashville and Chattanooga, under the orders of Thomas. This movement led the belligerents back over the same ground upon which they had opened the campaign, with reversed positions. But having freed his communications, and assured himself that Thomas covered his rear, Sherman resolved to execute a daring march to the Atlantic, the results of which, it seemed to him, would be decisive. For this, it was necessary to change his line of communications, abandon his connection with Tennessee, and direct his march upon an Atlantic port, relying upon the assistance of the fleet there.

Having obtained Grant's consent, and given orders to Thomas, who had 45,000 men, to hold Hood in check, and follow him in case he returned South, Sherman made dispositions to march from Atlanta to Savannah with:

65,000 men;

72 guns, with 200 rounds per gun;

And 2,500 four-horse wagons with 20 days' provisions.

He returned to Atlanta to prepare for this grand movement, and on the 11th November was in condition to undertake, with his veterans of the West, the imposing march, which for two months was to hold in suspense the entire population of the United States. His instructions are worthy of citation in full; but it will be

sufficient here to present those relating to communications and supplies.

His army was to march in four columns, and to make a mean distance of fifteen miles a day. It had no general supply trains. Each corps had its special munition and provision train. The army was to live upon the country, and to keep its wagons constantly filled with provisions for at least twenty days.

The march was begun on the 14th November, without apprehension of other difficulties than those arising from the character of the country. Not wishing to make use of the railroads, Sherman destroyed them all along the line of his march, which led through Milledgeville, Saundersville, Louisville and Millen. After advancing three hundred miles, he arrived before Savannah on the 10th December, seizing Fort McAllister first, then the city itself, and opening communications with the Federal fleet cruising in the vicinity.

Thenceforth the Union commander was free to move toward the north, to unite his operations with Grant's. His army was set in motion on the 1st February, after having received reinforcements. Charleston fell as soon as the railroads leading to it were destroyed. Sherman continued his march directly upon Fayetteville, stripping the whole of South Carolina of her resources. Wilmington had already fallen into the hands of the Federals. Finally he met the Confederate forces at Averysboro', on the 17th of March, and at Bentonville on the 21st, when he again checked Johnston, restored a short time before to the command of this army. On the 22d, Sherman was joined by Schofield, whom Grant had sent from the north, and Johnston was pushed upon Raleigh, where he was held until the 25th of April.

At this point hostilities ceased. On the 9th, Richmond had fallen into the hands of the Federals, and Johnston, following the example of Lee, surrendered.

Such was this campaign, the boldness of which can perhaps be compared only to the skill with which the communications were maintained and protected.

The railroads here played such a part that the armies had, so to speak, remained tied to them up to the time when Sherman was able to do without their assistance, and to change his line of operations, in opening new communications with the sea, upon ports whose possession was assured him by the Federal fleet.

However instructive they may be, the events of the War of Secession can give, so far as modern armies are concerned, but an incomplete idea of the establishment of lines of communications, and the manner of employing and protecting them. In this regard, it is again necessary to have recourse to the measures adopted by the Prussian General Staff in 1870.

LINES OF COMMUNICATIONS OF THE GERMAN ARMIES IN 1870.

At the beginning of the campaign, nine railroads were made use of by the Prussian General Staff to transport the troops of the North and the South to the zone of concentration.

After the invasion, these roads continued to keep the different German army corps in communication with their several supply districts in the interior; but the advantages of employing them were enhanced by calling into play our system of railroads and ordinary roads.

From this there resulted a successive development of communications, which it will suffice to follow in outline to make clear the system adopted by the enemy's armies.

I. Army.—Up to the end of the siege of Metz, this army communicated with its different corps regions almost exclusively by a line of stations which began at Courcelles-sur-Nied. The latter was the principal depot

in the theatre of operations during this period. This line was directed by way of Boulay upon Sarrelouis and across the Hundsrück upon Coblenz. Beyond the last-named place two railroads extended to the interior of the country.

Its line of stations was guarded by 9 battalions, 4 squadrons, and 1 battery, drawn from the landwehr.

After the fall of Metz, this army proceeded toward the north, and from the 15th of November, its line of communications was established by the Rheims-Épernay-Frouard-Metz railroad. It had, moreover, two lines of stations directed upon Metz: one by Réthel, Vouziers, Dun-sur-Meuse, Damvillers, and Briey; the other by Rheims, Verdun, and Étain.

After the taking of Soissons, two station routes were directed upon this point by Noyon and Compiègne; beyond this place use was made of the railroad, which this army shared with the Army of the Meuse.

By the end of the war, the I. Army had repaired and put in operation the circuitous railroad line, Clermont to Amiens, and Amiens to Rheims by way of La Fère and Laon. Independent of this supplemental section, its principal line of communications followed the railroad indicated above, called by the Germans the "north line."

Five battalions and a squadron sufficed to guard it. These had, however, to watch only the space between Paris and Péronne.

These communications were menaced by the Army of the North alone, and the I. Army was strong enough to hold this in check.

It is to be observed that the sieges of Thionville, Longuyon, Montmédy, Mézières, La Fère, Péronne, and Soissons, were undertaken only for the purpose of assuring the safety of this line.

III. Army.—In the middle of August, 1870, the III. Army arrived upon the Meurthe, after the passage of the Vosges. It had at its disposal the Nancy-Wissembourg railroad by way of Vendenheim; and two lines of stations: one from Sarrebourg to Haguenau by way of Bouxwiller; the other from Marsal to Wissembourg by way of Niederbronn.

The sieges of Bitche, Phalsbourg, and Toul were undertaken to assure its communications, which at this period were guarded by fourteen battalions of landwehr, a regiment of reserve cavalry, and a company of Bavarian engineers. Our defense of Toul thwarted the III. Army's attempt to establish its communications by the important railroad from Nancy to Paris, whose direction it followed. But this did not prevent its advance. As it pushed on, a line of stations was established in its rear from Nancy to Bar-le-Duc, by Colombey and Void to the south of the railroad. The empty wagons returned by the road from Gondreville and Écrouves. At the time when the III. Army made its grand wheel toward the north, its line of communications was prolonged by Void upon Saint-Mihiel and from Bar-le-Duc upon Clermont. Beyond these points, up to Sedan, the communications were established by the line of stations of the Army of the Meuse, upon both banks of this river. At the same time the general inspectorship of depots was established at Bar-le-Duc, where magazines and field hospitals had been collected as at Nancy and Lunéville.

The defense of these communications was in the main intrusted to the Baden and Würtemberg troops, in Alsace; and west of the Vosges, to Prussian and Bavarian battalions. For some time, our garrisons at Bitche and Phalsbourg rendered these communications precarious, without, however, having the power to break them. During the first days of September, the investment of our places in the East and the shutting up of the active

forces there, resulted in giving comparative security to the German communications. The larger part of the Prussian depot troops had stopped before the walls of Phalsbourg and Toul; those of Baden, before Strasburg. In fact, the III. Army had very few troops guarding its depot lines, 300 kilometres long [about 186 miles]. For this reason, the *francs-tireurs*, now beginning to organize, were not slow in assuming a bold front. They cut the railroad from Strasburg to Paris, as well as the telegraph line; but these were easily repaired, and the damage done was consequently without important influence.

After the battle of Sedan, and during the siege of Paris, the III. Army used for its communications the Nancy-Paris railroad, by way of Épernay, as far as Nanteuil-sur-Marne. Here it was obliged to relinquish the railroad in consequence of the destruction of the bridges and the tunnel.

The Army of the Meuse, whose fate since Sedan had been linked with that of the III., employed the route from Clermont-en-Argonne to Pont-à-Mousson. But for a long time it had no railroad except that from Nanteuil to Strasburg, which, from Épernay served also both the I. and III. Armies. But need was felt of a second line. In consequence, it was decided to besiege Soissons, which closed the branch road from Châlons to Mitry, by Rheims. The order for this was given on the 25th of September.

On the 20th of this month, the general inspectorship of depots of these two armies had been moved forward. That of the III. Army was established at Corbeil; and there was in hand to protect the line of depots against surprise, a small body of 4 battalions, 6 squadrons, 1 battery, and 2 companies of pioneers. At this period, moreover, an additional battalion of *etappen* troops was posted at each important point of the line, and it was

found necessary, a short time afterwards, to order an entire army corps, the VII., to protect the principal communications toward the south of the investing army.

In the meanwhile, the general inspectorship of depots for the Army of the Meuse, was fixed at Dammartin, a point which marked the extremity of its line of depots to the north-east of Paris. Lagny was then the head station of the line of depots of most importance to the troops engaged in the siege of Paris. Our eastern railway line remained then the great artery of German communication, called by the Prussian General staff at the end of the war the *central line.*

Its protection was at first assured by the troops charged with the guardianship of the depot sites, comprising:

11 battalions,
9 squadrons,
2 batteries,
4 companies of pioneers;

then by the VII. Corps which watched the *débouchés* of the upper Seine, the Aube, and the upper Marne;

And, finally, by the corps under General Werder, which, while covering the siege of Belfort, watched the approaches to the *central line*, from the side of the upper Meuse and the Vosges.

The Army of the Meuse, in addition, dedicated 4 battalions and 2 squadrons to the protection of its depot stations.

II. Army.—It is interesting to glance at the communications of the II. Army during operations upon the Loire, that is to say, during the latter part of the war. They at this time followed the railroad from Orleans to Juvisy, Montargis, Montereau, Joigny, Tonnerre, Nuits-sur-Armançon, Châtillon-sur-Seine, Chaumont-en-Bassigny, and Blesmes. They thus formed a long, sinuous line, easy to intercept, and unfortunately situated, being in rear of the left flank of the army which it supplied.

It was completed by three depot lines, namely:

One from Juvisy to Lagny by Villeneuve-Saint-Georges;

One from Corbeil to Épernay, by way of Tournan, Coulmiers and Montmirail;

And a third, from Toury to Saint-Dizier, by Pithiviers, Nemours, Sens, Troyes, Lesmont, and Vassy.

These communications were guarded by 9 battalions, 6 squadrons, and 1 company of pioneers, distributed along the lines. It was especially for the protection of these communications that the VII. Corps was directed upon Châtillon-sur-Seine and Nuits-sur-Armançon, when the enterprises of our *francs-tireurs* became so bold as to interfere with the security of the transports of the II. Army.

Army of the South and the XIV. Corps.—Until its arrival upon the Saône, the Army of the South, commanded by Field-Marshal Manteuffel, used the same communications as the II. Army; namely, the railroad from Châtillon to Blesmes.

We have seen that its commander, taking into account the unskillfulness of our improvised troops, did not hesitate to push forward through a difficult country, neglecting on both flanks the forces collected at Dijon and Langres. Kettler's mixed brigade, the composition of which has already been given, was left in rear for the protection of convoys.

But once upon the Saône, at Gray, Manteuffel, without faltering, changed his communications, fixing them upon the railroad from Vesoul to Blainville-la-Grande, by way of Epinal, the line which already supplied Werder's troops. This change was effected without difficulty, and, later, this line was supplemented by two station routes running from Dôle to Xertigny, to the south of Épinal, by way of Gray, Vesoul, Faverney, and

Vauvilliers; the other by Pesmes, Gy, Fretigney, Vesoul, Lineil, and Plombières.

All the German communications were established by special services, called *general inspectorships of depots* for armies, and *inspectorships of depots* for army corps. The depot sites, called *commandantures*, were generally in charge of a field officer.

Each general inspectorship of depots made a part of the army's headquarters, and comprised:

A lieutenant-general as inspector-general (except for the Army of the Meuse, which had a colonel);
A chief of staff;
Aides-de-camp to the inspector-general;
An artillery officer;
An engineer officer;
An intendant;
A provost-marshal;
And an advisory engineer for the railroads.

In most cases, these officers and functionaries were of high grade, and on the retired list.

The position of the inspectors-general was purely military, and their authority did not extend beyond the communications which they established. They had entire control of the matter of transports; but for the distribution of the guard troops, they were obliged to take orders from the governors-general of the provinces occupied.

The latter, charged with maintaining Prussian authority in the invaded provinces, were, as has just been intimated, in a certain measure responsible for the protection of the communications. The troops at their disposal co-operated, as occasion required, for the purpose of guarantying this protection. It is to be observed that these forces were quite large.

The government of Alsace had at its disposal:

22 battalions and 3 companies,
8 squadrons,
2 batteries,
10 heavy artillery companies,
3 companies of pioneers.

The general government of Lorraine had under its orders:

31 battalions and 3 companies,
7 squadrons,
3 batteries,
5 heavy artillery companies;

Also the detachment under Colonel Krenski, located upon the line of communications at Commercy, comprising:

6 battalions,
2 squadrons,
2 batteries,
6 heavy artillery companies,
3 companies of pioneers.

The general government of Rheims had under its authority:

20 battalions,
5 squadrons,
3 batteries,
8 companies of heavy artillery,
2 companies of pioneers.

Lastly, the Metz government had:

15 batallions,
2 squadrons,
1 battery,
10 companies of heavy artillery,
2 companies of pioneers.

All these, like the *etappen* troops, were drawn from the landwehr. A recapitulation of their effectives gives an actual army of the second line comprising:

Etappen troops of the I. Army	4,130 men.
" " " III. Army	10,910 "
" " " II. Army	8,160 "
" " " Army of the Meuse	3,460 "
Total *etappen* troops	26,660 men.
Troops of the General Government of Alsace	21,000 men.
" " " " Lorraine	33,070 "
" " " " Rheims	18,220 "
" " " " Metz	13,830 "
Total troops of occupation	86,220 men.
GRAND TOTAL	112,880 men.

Stated briefly, the service of the communications of the German armies in 1870 and 1871 was fixed as follows:*

In each army was a *general inspectorship of depots.* The duties of this office related to the establishment, protection, and operation of the lines of communications. Each army corps had a similar service called *inspectorship of depots.* The communications followed the railroads, as far as practicable; and when this was not the case, depot lines were established. It was sought to arrange, for each army, a double line of depots and an independent railroad. The protection of the communications was assured by troops of the second line distributed along them at intervals, and supported in case of need by special detachments.

Present Organization of the Lines of Communications.—Among the new organizations which experience in recent wars has evolved, must be included that relating to the communications. The present system, while derived from the past, takes into account the great changes

* The battalions are counted at 800 men; the squadrons at 130; the batteries at 110; the pioneers companies at 180.

brought about in the means of communication and in the composition of the forces set in motion.

It will be well, then, to consider the body of circumstances which go to make up the new conditions.

The lines of communication are now generally composed of the railroads connecting armies with their supply centres. These become at once their lines of transportation and of march, and are no longer limited, as formerly, by the base of operations, but, on the contrary, extend to the interior of the country, to the regions which feed the army corps. They are called into operation at the moment the armies reach their zone of concentration.

The advantages which the possession of several railroads assures to armies, have no need of being demonstrated. The same is true regarding the importance of the services charged with establishing these communications. The augmentation of the effectives and the increased complexity of the military machine, have still further added to this importance.

As a result, the organization of the lines of communication, their protection, their development, the establishment of intermediate stations and depots, in a word, the services pertaining to the rear, have been almost everywhere fixed by regulations.

The movements which take place along the lines of communications are directed:

From front to rear, for prisoners, wounded, sick, and unserviceable *matériel;*

From rear to front, for reinforcements and supplies;

And, finally, *transversely*, for the maintenance of communication between the various operating bodies, and also between the different parts of the forces of occupation.

This division indicates the distribution of these services. The care of assuring order and regularity in these

movements, is intrusted to a general officer, who has under his orders the troops and employés serving in rear of the armies.

The system of communications is divided into sections, each under a field officer. These sub-commanders are given great latitude of action, and upon them rests the responsibility for the adoption of all proper measures, such as the organization of depots, the repair of communications, the establishment and maintenance of magazines, the protection of transports and marches, the creation and repair of fortifications for defence of important points, etc.

Inspectors of lines or sections, and commandants of depots, etc., are to second them.

These various authorities must always be dependent upon the general-in-chief, and act only in accordance with his instructions.*

As far as possible, the rail communications should be supplemented by accompanying depot lines.

The groundwork of the foregoing principles was laid down in the beginning of the century by Napoleon. His views may be found in his correspondence with Berthier.

Whatever may be the perfection of existing systems, however, it is proper to remark that a menace to an army's lines of communication is now no less dangerous than formerly. By reason of the high effective of the masses to be provided for, the security of these lines is even more than ever a necessity upon which depends at once the existence of the troops and their capacity for effective service.

But, on the other hand, with the present extension of railway systems, we should understand that the seizure

* Our [French] regulations upon army depot service were published August 21, 1884. They fix the methods to be henceforth followed in establishing communications.

of a single line will cause only temporary embarrassment to an army possessing several lines.

Thus, in 1871, the destruction of a section of the Paris-Nancy road would have produced no change in the movements of the Germans, unless its loss had continued for several weeks; for at this period, their armies controlled other railway lines. Their communications embraced a zone of country included between the railroad from Mézières to Metz, by way of Thionville, and the line from Nuits-sur-Armançon to Lunéville by Chamont-en-Bassigny; thus covering a space with a mean width of 160 kilometres [between 99 and 100 miles], and a length of more than 400 kilometres [about 248 miles].

It was not possible, then, for a party of *francs-tireurs* to cut them. The latter might injure one road, cause a stoppage here for a short time, and diminish thus the enemy's means of circulation; but it would require an entire army to intercept all the routes held by him, drive away the troops defending them, and oblige one of his armies to turn back to secure their restoration.

However, it is to be remarked that, during nearly the entire war, the various German forces used one section of railroad in common, that from Blesmes to Frouard. It is not doubtful that a French army posted in Argonne, from Blesmes to Grand-Pré, would have placed these forces in a critical situation.

Was this the object that our Government of National Defence sought to attain? Was the project feasible? These are questions which it would be difficult now to answer. But it is sufficient to put them in order to show what was, perhaps, the most vulnerable part of the German system of communications during the last invasion.

V. DEFENSIVE LINES.

Lines of defense are formed by natural obstacles, behind which an army organizes its resistance. They cover a country against invasion. They serve to guard the front of a position, and to protect a retreat—in a word, to increase the chances of success.

In these various aspects, the study of lines of defence is coincident with that of defensive operations. It will still be useful here, however, to gain a correct conception of their strength and the assistance they render to armies. In this regard, no better idea can be given of the qualities required in a good defensive line and the comparative importance of accidents of the ground, than that presented in the views of Napoleon.

We know that he was thoroughly acquainted with the various theatres of operations in Europe. But there were two of them which events gave him special opportunities of studying. These were the valleys of the Po and the Danube. The observations left by him upon the military importance of these regions, and especially upon the defence of Italy, will always remain worthy of profound consideration.

"The frontiers of states," he wrote, "are either mountain-chains, great rivers, or large and arid deserts. France is thus defended by the Rhine; Italy by the chain of the Alps. Of all these obstacles, deserts are without doubt the most difficult to cross; mountains hold the second rank; large rivers have only the third."

"To oppose an invasion by the French, the best line to take is that of the Roja: the right of this line extends from the pass of Tenda to Saorgio, the centre from Saorgio to Breglio, and the left from Breglio to the sea. The town of Saorgio and a small fort upon the heights of Breglio would serve as a support for this line, and to guard the high road leading to Tenda. This line forced, the Genoese Riviera offers several others, such as

those furnished by the Monte-Grande, covering San Remo."

"The Ticino forms a last line against the aggressions of France, and also against an army debouching by the Simplon; the right rests on Lago Maggiore and the mountains; the left on the Po and the defile of Stradella, which has uninterrupted communication with the Ligurian Apennines. The Ticino is wide and rapid. The bridge at Pavia intrenched and well guarded, and a good fort at the defile of Stradella, would cover Italy from the French side. *The lines* which an Italian army *ought to take* in order to oppose an invasion from the side of Germany, are those which follow the right bank of the rivers flowing into the Adriatic, to the north of the Po; *these lines* protect the entire valley of the Po, and hence close up the peninsula, and cover *upper*, *middle*, and *lower* Italy. Those which follow the rivers emptying into the Po divide the valley of this river, and expose middle and lower Italy; it is necessary here to have *two armies manœuvring* upon opposite banks of the Po.

"*The lines of defense*, which cover the valley of the Po, are those of the Isonzo, Tagliamento, Livenza, Piave, Brenta, and Adige.

"The line of the Isonzo *covers the whole of Italy*, since it forms one of its boundaries; but this line is turned by the high road of Pontebba, which descends upon Osoppo and the Tagliamento; a strong position near Tarvis should then be occupied, which would shut off the two highways of Pontebba and the Isonzo.

"The line of the Livenza can be turned by its left, from Sacile to the mountains. The Livenza is not fordable; it is marshy, but not very wide.

"The line of the Piave is defended by the forest of Montello, and from there to the sea it is covered with impracticable swamps; but the Piave is fordable in

places. To give importance to this line, the bed of the river should be partially dammed, and the country in the vicinity flooded. *This line has the advantage of covering Venice.*

"The line of the Brenta, to the left of Bassano, is closed by passes easy of defence; from Bassano to Brondolo, the Brenta is fordable.

"The high road from Munich to Verona, which extends through Brenner Pass and across the Adige, turns these five lines, so that if the enemy had an army corps in Bavaria and Tyrol, he could reach the right bank of the Adige by this route, and cut from Italy the army occupying any one of these lines.

"The Adige is the sixth and last line which covers the valley of the Po: it is beyond comparison the best. This line is divided into three parts: the first, between Lake Garda and the plateau of Rivoli; the second, from Rivoli to Legnago; the third, from Legnago to the sea. The first is defended by the heights of Montebaldo and the position of Corona; the enemy cannot move there with artillery. The works at Verona and the portion of the city upon the left bank must necessarily be occupied as bridge-heads. The small town of Legnago serves as bridge-head to the centre of the line. From Legnago to the sea, there are many marshes; it is possible, profiting by the waters of the Adige, the Brenta, and the Po, to establish a means of communication with Venice. By cutting the dam of the Adige below Porto-Legnago, all the ground between this river and the Po is inundated; their waters are joined to those of the Molinella; then all the country from Legnago to the sea becomes impracticable. Upon opening the sluice-gates at Castagnaro, the Blanco Canal is filled by the waters of the Adige. This canal empties into the Po; it forms *thus a second line*, in case the enemy passes the Adige between Castagnaro and the sea. The best way of defend-

ing the Adige is to take post on the left bank, upon the heights of Caldiero, behind the Alpone, the right supported by the marsh of Arcole, with two bridges at Ronco, the left supported by commanding heights which could be easily intrenched in a few weeks; then all the portion of the *line from Rivoli to Ronco* is covered, and if the enemy wishes to pass the Adige between Arcole and the sea, the forces are in position to fall upon his rear.

"The Mincio is the first line which cuts the valley of the Po. This line requires the control of Lake Garda and the fortress of Rocca d'Anfo. The towns of Peschiera and Mantua are the principal sources of strength for this line."

These citations are sufficient to gain our recognition of the following general principles:

A good line of defense should have its flanks so well covered as to offer security against a turning movement.

Its front should be protected by an obstacle difficult of access, and there should be in its rear, lines of retreat, protected by positions of the second line.

It would be proper to add to these conditions, those imposed by tactics; but the latter will be indicated farther on, in considering defensive positions.

Upon the whole, the strategic study of a theatre of operations should set in relief the importance of the different zones of country, and the part which they may be called to play, whether as bases near the frontiers, as regions of march, or as positions.

Having examined the principles fixed by experience relative to this subject, it will be interesting to follow their application during the Franco-German war.

III.—Objectives and Lines of Operations of the German Armies in 1870.

Progressive Occupation of the Theatre of Operations.—We have already seen how the first base of operations of the

three German armies was, as early as 1868, selected by Von Moltke in the Bavarian Palatinate.

Once upon the frontier, and after being assured of our defensive attitude, the first care of the Germans was to decide upon the directions of their march; and for this it was necessary to know the positions of our forces. On August 3, intelligence was received, through the cavalry, that our principal masses were in Alsace and upon the Sarre.

These regions became at once the first general objective in the march of the invading armies.

Lines of Operations and Objectives of the I. and II. Armies from the 5th to the 14th of August.—Seeing that we were letting the opportunities to take the offensive slip from us, Von Moltke, in order to settle upon his lines of operations, had already endeavored, before Spicheren and Frœschwiller, to penetrate our designs.

First of all, our resolution to remain upon the defensive seemed evident to him. Then as the Moselle, near the frontier, offered a good line of defense, having many advantageous positions and possessing in its lower valley two fortified points of support, Metz and Thionville, 26 kilometres [about 16 miles] apart, he supposed that on the 4th of August our army was in position, either in advance of this river or along its course, its wings supported upon these two strongholds.

In consequence, he decided that the I. Army should engage us in front, while the II. made its attack by a flanking movement directly from the south.

This decision defined the first objective and the line of operations of the group of armies forming the German right. The objective was to be the enemy's principal army, whatever its position. The line of operations was the system of roads leading from the Sarre upon the middle Moselle, and included the railroad from

Sarrebrück to Metz, an important double-track road traversing the Bavarian Palatinate and connecting the valleys of the Rhine and Moselle.

Such was the first general idea, conceived while yet at the base itself. It resulted from first information gathered regarding the enemy's force and position, and was conformable to the *projet* of operations.

This idea was not at once communicated to the army commanders. The frontier must first be crossed; this was the immediate aim. This operation would probably lead to an encounter, and perhaps modify the first *projet*. It was necessary to wait, then, before making known the combinations of the generalissimo.

Objectives and Line of Operation of the III. Army up to August 7.—On 30th July the III. Army received orders to move toward the south by the left bank of the Rhine, to seek and attack our forces in Alsace.

This action was demanded by the presence of our troops, and by the necessity of first of all protecting South Germany.

Here again, the objective and line of operations were indicated, but only in a general way, on account of the scarcity of information. The III. Army was to supply this deficiency.

It received orders to move first, because it formed the exterior wing in the vast wheeling movement, which was to transfer the group of German armies from the Palatinate to the Moselle.

The objective was reached August 6, almost unexpectedly, and on the very next day, this army had to select a new direction.

Its choice depended upon the situation of the enemy; consequently it was necessary to follow the forces defeated the evening before at Frœschwiller [Woerth].

Affairs now took a peculiar turn.

The Germans, with their customary logic, supposed the beaten forces of MacMahon would, according to the rule in such cases, fall back upon their supports, that is to say, upon the principal army, which was at Metz. The fact that the bulk of their masses appeared to be moving upon Niederbronn and Bitche, lent probability to this supposition.

It was necessary then to take a general direction toward the west, that is to say, to change the recent line of operations, complete the grand wheel commenced on the day of battle, and to march upon Metz.

This direction led across the Vosges, to the north of the Nancy-Strasburg line. The Germans followed it without hesitation, spreading out on both flanks, since they were now unopposed.

The Sarre was indicated to the various corps of this army as the first line to be reached upon the west side of the Vosges. They crossed this range without hindrance, the French having fallen back.

The small places designed to defend its passes not being upon the communications, caused no concern.

The line of the Sarre was occupied August 12.

A strong place of the first order, Strasburg, was upon the left and rear of the army's new line of operations. A division, composed of all arms of the service, and which was to be further strengthened, moved to the siege of this city. Its first step was to occupy Vendenheim, at the junction of the Paris-Strasburg and Strasburg-Mayence railroads.

This division became thenceforth independent.

March to the Moselle.—Having arrived upon the Sarre, the III. Army continued its march toward a new line of defence, the Moselle. At the same time, Von Moltke ordered it to take a somewhat more southerly direction, toward Nancy and Lunéville.

This was to give to this army for its immediate objectives these two important cities, the possession of which assured to the Germans the control of the Nancy-Vendenheim-Wissembourg railroad, and the branch lines from these places.

Beginning with August 10, the III. Army, having ascertained the exact direction taken toward the south by MacMahon's corps, extended its front of march and consequently the width of its zone of operations, without other concern than to limit itself toward the north by the left of the II. Army.

It reached its new objective on the 14th of August, without interruption. Its first care was to occupy Frouard, junction-point of the Paris-Nancy and Nancy-Metz railroads. It then pushed on to Toul, a fortified place on the first of these lines, which it found defended.

In the meantime the group of armies of the right, for a moment embarrassed by the false hypothesis of the retreat of our forces from Alsace upon Metz, also directed itself upon the Moselle. The objective of the I. Army was our army's front, that is to say, Metz; and its line of operations, the system of communications comprised between the road from Sarrebrück to Pont-à-Mousson and that from Sarrelouis to Metz.

The II. Army took our right wing for its objective, and for its line of operations the roads having the general direction Sarrebrück-Pont-à-Mousson, supplemented by those leading to the south from the Sarre to the Moselle.

For a short time, our corps concentrated upon the left bank of the Nied-Francaise, between Pange and Courcelle-sur-Nied. This position then became the objective for the enemy's group of armies. But this situation was of short continuance; it lasted but a single day, the 12th of August, and the next day the general direction was resumed.

In executing these movements, the German armies took the precaution to seize the railway stations of Forbach, Saint-Avold, and Courcelle-sur-Nied.

After the 12th of August, the important line of the Moselle was in their power, together with the passages of this river.

The action of the 14th, 16th, and 18th of August assured them decisive results, among others the throwing back of our army within the entrenched camp of Metz.

Objectives of the German Armies after the Battle of Saint-Privat [Gravelotte].—A new situation was then presented to the victor.

The position of his adversary was again the controlling consideration.

After the 18th of August, the new objectives of the Germans were, on the one hand, the army thrown back upon Metz, and on the other, the forces reforming at Châlons.

In consequence, one army was to observe the first and to render it powerless for further action. The mission of this blockading army took now an essentially defensive character; it was to check every attempt of its adversary to assume the offensive.

Then, a group of two armies was immediately formed, and, on the 20th, put *en route* toward Châlons.

In the order of the German generalissimo dated the 19th of August, Paris was indicated as the principal objective; but the forces assembled at Châlons were designated as the *immediate* objective.

Lines of Operations from the Moselle upon Chalons.—As a consequence of the above, the III. Army continued its operation toward the west, having for general direction, Nancy, Commercy, Bar-le-Duc, Vitry and Châlons.

The IV. Army took for its line of operation, the route from Metz to Verdun, then the Verdun-Châlons railroad by Sainte-Menehould, taking care to close upon the III. Army toward the defiles of Argonne, a few days before reaching Châlons.

But news of the march of the Châlons army toward the north, and then towards the north-east, again led to a change in their directions.

It would be easy thus to follow the successive developments of the German objectives and lines of operations to the end of hostilities; but this would lead us too far. The brief statement here given of this first series of events, will suffice to confirm the principles already set forth, and to show their application in the operations of modern armies.

§ 3.—*Projets* OF OPERATIONS.

The aim of the study of theatres of operations, of the resources of the adversary, and of the conditions under which the war is likely to be carried on, should be the establishment of a plan of campaign.

This is the necessary complement to active preparation for war.

Definition.—Before the adoption of the present military systems, governments usually waited until their political relations became so strained as to point to hostilities, before establishing a plan of campaign.

At such a juncture, questions relating to the probable theatre of operations, and the strength and plans of the enemy, presented themselves for immediate consideration. The second step was to determine upon movements that seemed best fitted to these circumstances.

The projects thus formed, constituted the *plan of campaign* or *of operations.*

To-day, this is no longer the case. The opening of the campaign so closely follows the declaration of war, and the affairs which press at the outset are so multiplex, that the generalissimo would not have time to prepare a *projet* of operations.

It then becomes imperative to establish these *projets* during peace, not upon a positive basis, but upon probable hypotheses. To avoid surprises, these hypotheses should sweep in all possible contingencies. Properly speaking, these are no longer plans, but simple projects. They may be defined as *the exposition of the first combinations which are to serve as a guide to armies in their operations.*

They will be of two kinds: the *plan of war*, and the *projet of operations.*

The Plan of War.—The plan of war is dependent upon the political situation. It determines the general conditions which are to govern the war. It embraces the different theatres of operations from an offensive or defensive point of view, the general end to be attained, and the manner of combining the movements of the various forces. In a certain measure, it lies within the province of the government; but all military questions should be intrusted to the general-in-chief and the chief-of-staff.

Circumstances may sometimes require the preparation of several plans of war. At the present time, for example, France is forced to consider in advance the means of sustaining a war with Germany and Italy. She should even provide for the unfortunate situation in which she would be placed, if after a first reverse, she should see all the neighboring powers declare against her.

***Projets* of Operations.—Their Provisional Character.**—*Projets* of operations indicate the general method of carrying out the plan of war upon a determined theatre.

As has been said, it is especially to them that the designation plans of campaign should be applied, were it not for their provisional character.

They are of special service to the general-in-chief at the outbreak of the war, when the exact situation of affairs is known; they then, during the few days which the period of mobilization usually affords, aid him in the adoption of a definite plan.

Certain authors, especially in Prussia, maintain that these provisional plans are useless, and attribute to Napoleon the saying: "*I never had a plan of operations.*"* This may be so, but every one to-day knows with what care the Prussian staff elaborates its *projets* of operations, and with what certainty it holds its combinations ready for attack upon its enemies.

We also know what profound attention Napoleon always bestowed upon the preparation of his first movements. On this subject he wrote to his brother Joseph on the 6th of June, 1806: "Nothing is attained in war except by calculation. During a campaign, whatever is not profoundly considered in all its details is without result. Every enterprise should be conducted according to a system; chance alone can never bring success."

To-day, the rapid march of events after the declaration of war, no longer leaves time to retrieve an error. It is then a matter of necessity to bestow, in time of peace, the greatest attention upon the preparation of these provisional plans.

In every case, it is clear that they can embrace but a short period of operations, and that only at the outset.

They consequently will be governed by the already determined character of the war, the probable *projets* of the enemy, the forces which he can place in motion, and the lines of operations which he is likely to adopt.

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* *The Nation in Arms*, by Major Von der Goltz, p. 199.

The choice of the zone of concentration, the first objectives, and the lines of operation, should result from these data. Everything else is contingent upon future events. The provisional plan may still mark out a general aim for the army, but this will be all.

It is not possible for the *projet* of operations to go beyond the first battle, because a decisive action often completely changes the situation. New combinations and new *projets* will consequently be required. "It would then," as Von Moltke has said, "be an error to expect to see in the development of a campaign, the complete execution of a plan settled in advance in all its details. The leader of an army, no doubt, has always before his eyes the essential object to be pursued, but he can never indicate precisely the ways in which it may be reached. 'During the course of operations,' says General Berthaut, 'there arise, even leaving battles out of consideration, many unforeseen events, such as the arrival of reinforcements, or a change in the manner of grouping the forces, which modify the situation, and give rise to new problems, the solution of which cannot be determined in advance.'"

The opinions of great leaders have always confirmed these principles.

Should armies become more numerous and the frontier fortifications closer together, the limits of these *projets* would be still more restricted, for the forces would be immediately in presence of each other, and the space left for their movements still further reduced.

The Officer Charged with the Preparation of *Projets* of Operations.—It is the head of the army, and in France, consequently, the Minister of War, upon whom rests the responsibility connected with the drawing up of the *projets* of operations. Usually this work is intrusted to the chief of general-staff, who should, in this behalf,

collect necessary information through the efforts of his officers, without acquainting the latter with the use to be made of it.

The plan of war has already provided for the event of a conflict with each neighboring power, sometimes with two of them; it has weighed the consequences, and worked out the resulting situations. These assumed situations become the starting-point for the chief of general-staff in the preparation of the *projets* of operations.

Data Necessary for Drawing up a *Projet* of Operations.—These data, as we have seen, will necessarily be:

1st. *Information regarding the probable theatres of operations.*

Secret reconnaissances, made in time of peace according to a particular programme and corresponding to the general aim of the *projet*, will easily complete the liberal information possessed to-day upon the geographical situation of each country.

2d. *Exact ideas regarding the forces at the disposal of the enemy.*

The general-staffs of all armies should gather the latest information in this particular, in time of peace.

3d. *Statistical information upon the resources of all kinds which the various theatres of operations afford.*

As soon as these data are gathered, the question will arise of deciding upon the offensive or defensive.

Offensive *Projet*.—Let us examine first the case of the offensive.

The principal army of the enemy will always be the first objective. The numbers of his forces and the railroad terminal points upon the frontier are known. Consequently his zone of concentration may easily be fixed, as well as the time required for making the movement.

There is hope, then, of being prepared before the ad-

versary, or certainly at the same time, and of having a superiority, or at least a numerical equality. Consequently, the offensive is decided upon.

The hypothesis of being behind the adversary in preparation may still, however, be compatible with the offensive, if, after the concentration, there remain two or three days in which to march upon the enemy with an approximate equality of forces.

In these different hypotheses, the hope is entertained of reaching the opposing army in a definite region, and at a date which may easily be calculated with comparative accuracy.

Nothing remains but to adopt the strategic combination promising the greatest advantages. Almost always this will be a turning movement, designed to threaten the adversary's communications and to obtain the most decisive results.

Thus, after having studied the means at the disposal of the enemy, and the zones of invasion open to the offensive, the position necessary to occupy is approximately determined. Among these zones that one is chosen which permits the most rapid march upon the enemy, and an attack under the most favorable conditions.

To determine this zone, it will be necessary to examine the relative value of all, to scrutinize their topographical configuration; the facilities or the difficulties which they present to the movements of troops; the roads; the railways belonging to the national system which can serve to supply the army; the resources found in each for maintenance of the troops, etc.

After this first work, a decision must be taken:

1st. *Upon the points at which to effect the concentration;*

2d. *Upon the direction to be given the movements of the forces, and upon the zones of march to be assigned;*

3d. *Upon the general end to be attained, and upon the number of armies into which the forces should be formed.*

A solution of the first strategic problems connected with the beginning of a war, will thus have been reached.

Defensive *Projet.*—Let us pass to the defensive.

In taking the rôle of the defensive, the assumption is that the enemy is ready first, and that he has a numerical superiority upon the zone of concentration.

A beginning of this sort holds out to the enemy such a strong invitation to success, that an army should never voluntarily thus expose itself. It would be better not to wage war. But there are circumstances in which a country may be forced to soberly examine, before hostilities, the probabilities of a defensive war. It is necessary then to provide in advance for such a contingency. The opportunity of thus making a deliberate examination of the matter should be regarded as a comparative advantage.

Here it is still more requisite than on the offensive, to hold exact account of the zones on the enemy's frontier marking the extreme limit of his rail transportation. It is essential to ascertain, with as much precision as possible, the number of corps that he will concentrate there, and the day on which the movement will be completed.

These two cases are presented: either it will be possible to make several marches in the direction of the enemy, or the attack will come before departure from the zone of concentration is practicable.

In the first instance, it is very necessary to profit from the respite vouchsafed by circumstances, to determine the position where the first encounters are likely to take place, and to decide upon the most advantageous direction for delivering the blow; and finally, it is essential to march boldly upon the enemy, and attack him without hesitation. This is to return to the plan of taking

the offensive after having been several days behind the adversary in making ready for war, and will always be the soundest measure to pursue whenever the circumstances are favorable.

When this course is not open, it is imperative that the concentration be effected under shelter of a screen of troops charged with guarding the frontier, and behind a line of defence strong enough to delay the enemy's movements. As far as possible, it should be made upon strong positions suitable to receive an attack. After that, nothing remains but to trust to circumstances.

We shall have, then, as on the offensive, to define, first of all, the *probable points of the enemy's concentration*, the number of his effective forces, his lines of invasion, and the direction of his attack. It is in the light of these data that we should select the ground upon which to make ready to receive him. This, as far as practicable, should be under cover of a line of defence, and in the strongest possible position, as has already been said.

We generally consider defeat as the lot of the defensive. If it is often so, it is because the troops compelled to take this part have usually less confidence and energy than the assailant forces. But if the contrary is the case, if the defence can direct its efforts aright, and prolong the struggle, it also has favorable chances of success. From this point of view, an army making an energetic defence should have but one aim—to become the assailant at the first opportunity.

With the defensive, as with the offensive, the first objective is the enemy—the battle. It is upon this event that all its attention should be bestowed. With modern arms, with like forces, equal in courage to the troops of the enemy, with clear ground to the front, with a position not easily turned, theoretically, the defense should prevail. If it is otherwise, it is because the fact of remaining upon the defensive weakens the energy and

morale of the troops, especially when this course is adopted in consequence of a marked numerical inferiority.

In every case, it should never be lost sight of that the defensive is peculiarly exposed to flank attacks, that its wings are vulnerable points, and that to preserve its lines of retreat, it must strengthen them by suitable points of support.

The defensive ought, finally, to prepare for a frequent renewal of its efforts. Often an action renewed on the second day, with the aid of fresh troops, leads to a triumph over an enemy who the evening before believed himself victorious. It is in these first resistances that the defensive should display its obstinacy and its vigor.

The Relation of the Frontiers to the Defensive.—Whatever may be the condition of the struggle, the event of defeat should be provided for, and consequently the different positions, the successive occupation of which would permit the country to be defended foot by foot, must be known in advance.

The fortifications of the frontier and of the zone in rear will necessarily play an important rôle in the midst of these events. Their investment should be considered as a probability. It will be essential, then, to estimate the number of troops of the second line necessary for their defense, the time when these forces will be in position, and when the armament of the forts will be completed.

On account of the rapidity with which armies assemble, and the muliplicity of duties devolving upon the troops from the moment war is declared, such measures should be kept in force even during time of peace as will assure to places, forts, and intrenched camps, of the first line, an armament sufficient for their defense, proper munition supplies in their magazines, and a portion of their defenders ready at their posts.

In a defensive *projet* it is necessary to admit that the assailant will be but little delayed to-day by fortifications on his lines of invasion and on his flanks. The high effective of the masses put in movement permits him to mask them until the troops of the reserve arrive for their investment.

It will be possible to approximately estimate the detachments made from the enemy's forces in passing this line, and the decrement in his strength resulting therefrom.

The defender will have had a few days' breathing space in which to concentrate upon the positions of the second line the fresh troops that had not been able to reach him in seasonable time. It is to these that the defense will be intrusted. The beaten troops will rally behind them, to engage again, if not too much demoralized.

But history proves that at any price, even in case of disorganization, beaten troops should not be held in besieged or invested places. Nothing is more pernicious than the shutting up of field forces in fortified towns; investment is the prelude to capitulation.

Moreover, a people that counts upon its fortresses to save its independence, is a people destined to perish. It can have no future save servitude. Fortresses are built with a view of offering to defeated armies the means of reforming, and of resuming the offensive. Yet history presents no instance in which they have served this end. An army beaten, and driven into a fortified place, is an army definitively conquered. To restore its elasticity, it would be necessary to have the power of transporting it to the interior of the country, there to wait until discipline, confidence in its leaders, and popular encouragement, had reanimated its heart. Above all, then, strongholds should be avoided. They exercise an unhealthy influence upon the troops, which shakes their *morale* and develops human weaknesses, without

raising in the minds of the leaders a suspicion of their existence. It would be better to fight without leaning upon fortresses, and experience a new defeat.

The Army of Metz could still have effectively served its country after the battles of Borny, Rezonville, and Saint-Privat, had it been able to fight beyond the range of the guns of this place, and disposed to consider the fortress merely as a point of support for its manœuvres.

The *projet* of defense ought then to take these things into consideration, and, further, to choose a line of retreat covering that portion of the territory whence come the reinforcements, to prepare for the destruction of railroads, to organize means of retarding the enemy's advance, and, in general, to profit by all means of resistance.

The essential elements in the establishment of a *projet* of defensive operations are then:

1st. *Selection of a zone of concentration, as far as possible, in rear of a good line of defense;*

2d. *Selection of favorable positions for battles, and organization of their defense;*

3d. *Selection of lines of retreat and successive positions in rear.*

As applications of these principles, the *projets* of operations formed by the Austrian, Prussian, and French staffs before the campaigns of 1866 and 1870, offer us instructive examples:

Of four *projets* prepared at these periods, three were of an offensive character; one alone was defensive—that of the Austrians in 1866.

Let us first study the campaign which interests us the more, that of 1870.

§ 4. *Projet* OF OPERATIONS OF THE PRUSSIANS IN 1870.

On account of the triumphs of the Germans, the plan of campaign, or *projet* of operations, of Von Moltke has

been brought into prominence. It deserves then to attract our attention at the outset.

As has already been seen, the idea of invading France had been firmly rooted in the German mind since 1815. It was the secret hope of all patriots; it is still to-day the desire, more or less expressed, of a great many officers. The number of works published on this subject, from 1815 to 1870, was considerable, and the combinations which they proposed were probably of service to Von Moltke in the latter year.

Several citations will give us opportunity to judge of this.

Putting to profit the lessons of 1814 and 1815, General Clausewitz laid down as a principle that the invasion of France should be undertaken with a mass of from 700,000 to 800,000 men, furnished by Germany, Austria, Italy, and England combined. These forces were to march upon Paris by the east and the north-east, in two grand armies of 300,000 men each; and he indicated the valley of the Loire as the most suitable locality in which to decide, in one supreme battle, the fate of our country.

The idea of making the march upon Paris coincident with the occupation of the Loire at Orleans came up for the first time in 1813, in a council of war held at Frankfort by the principal generals of the Coalition. It appeared then combined with a plan of concentration in Haute-Marne, in the vicinity of Langres.

Later, in 1860, we again find, in the *projets* of the Bavarian General Hartmann, the recommendation of a line of invasion directed from the Rhine upon Nancy by way of the Sarre. The plan embraced the masking of Strasburg, Bitche, Metz, and Thionville, while taking Paris constantly for the objective.* This plan of in-

*General Hartmann was familiar with a report made by the Inspector General of Engineers, Prévost de Vernois, and quoted it entire.

vasion laid stress upon the formation of two grand columns, designed to effect a junction near Nancy. They were to cross the valley of the Rhine: one with Germersheim and Landau for bases, the other based upon Sarrelouis.

During the same year, in an essay upon the lines to be adopted in the invasion of France, Lieutenant-Colonel Meyer, of the Prussian staff, recommended the directions from Sarrebrück to Verdun by Saint-Avold, thus turning Metz, and from Sarreguemines to Frouard and Pont-à-Mousson.

In this new project, the investment of Strasburg was regarded as a necessity at the outset of the campaign, and the cities of Neufchâteau, Vaucouleurs, Pagny, and Saint-Mihiel were designated as the natural points of assembly upon the Meuse for the German columns.

The Luxemburg question and the imminence of a war with Prussia gave rise to new plans of invasion.

One of these proposed the irruption *en masse* into the centre of Lorraine, by the routes comprised between the Vosges and the Moselle, then the invasion of the country between the Meuse and the Moselle, and, depending upon circumstances, either a march upon Paris, or with the assistance of South Germany, a conquest of Alsace and Lorraine. Considered apart from the means of execution, the majority of these combinations are reduced to this: *to overwhelm France by a violent effort, through a great numerical superiority.* Regarding the end to be reached, they had likewise but a single objective: *the conquest of new territory.*

These projects had threatened our country since the beginning of the century. Unfortunately they were not often enough the object of serious reflection on our part.

In Germany, on the contrary, when the Prussian staff had to prepare a plan of campaign, the matter was already ripe. It remained only to bring the measures pro-

posed in the past into accord with the circumstances of the situation at this time. The study of this situation was prosecuted with vigor. Already in 1868, meetings had taken place in Berlin between the chiefs of the Prussian staff and the representatives of the contingents of the South. The combinations to which the next war with France would give rise were discussed, and the most suitable operations to guaranty the protection of South Germany recapitulated.

A leading idea of concentration upon the middle Rhine was concurred in by all.

During the following winter, 1868–9, the whole plan was completed, and the work necessary to give it effect was immediately begun by the Prussian general staff under the direction of Von Moltke. It was industriously pursued and promptly completed. Soon nothing remained but to obtain the approbation of the King, to inscribe the first day of mobilization upon the schedules of march, and to direct the movements to the front.

This *projet*, formed in 1868, in consequence of the prospect of war, to which the act of Germany the year before in the Luxemburg affair had given rise, was elaborated in the following manner:

1st. *It first of all closely considered the respective forces of France and Germany.*

It is a notable fact that, under all circumstances, the great concern of the German staff has been to possess a numerical superiority.

In a manner more or less candid it admitted that this superiority had been attained. This point was established with a precision which showed a profound acquaintance with our resources.

2d. It then examined *the combinations by which this superiority could be increased. Among these were to be counted those likely to divide the French forces; for example, an isolated attempt by us upon the South German States.*

This explains the determination which constantly animated all the German officers after the 6th of August, 1870, to maintain at all hazards the separation of our two groups at Metz and Châlons.

3d. *After the study of our forces, came that of our probable operations.*

The first, the one in which the Germans generally had the greatest interest, and which the Prussians especially feared the most, because it would immediately weaken them by about three army corps, was a march against the States of the South. To prevent this, a combination was proposed, and in 1870 adopted, by which all the forces of the North and the South were to unite upon the middle Rhine. The left flank of a French army penetrating Germany would thus be menaced, and brought to a standstill.

This proposition, as has been said, was accepted in 1868, by the representatives of the States of the South.

The second contingency was the violation by us of the neutral territory of Belgium. This was to be met by a concentration upon the lower Moselle, and a direct menace to our right flank.

The march of our army against Germany by way of Switzerland, was regarded as too disadvantageous to merit an examination.

The conclusion from this study was: *First, the probability of a concentration of our forces upon the Metz-Strasburg line; then, of their march to the line of the Main, for the purpose of turning the strong places of the Rhine and of separating the States of the South from those of the North.* (*See Plate XVII.*)

After having thus estimated our forces and considered our probable designs, the Prussians sought a means of successfully opposing them. They examined, from this point of view, the consequences of a German concentration to the south of the Moselle and to the east of the Sarre.

This would permit an attack upon our left flank between the Rhine and the Black Forest, with the prospect of a disastrous retreat for us.

In case the direction of our railroads should oblige us to form two principal masses at Metz and Strasburg, the occupation of the Palatinate assured to the German army the possession of an interior line of operations.

The choice then lay with the high roads leading from Kaiserslautern to the upper Moselle in the direction of Nancy, by Bitche and Dieuze, or by Sarreguemines and Château-Salins.

The Germans thought thus to apply the favorite manœuvre of Napoleon when directing a numerically inferior force, but with this difference, that here the advantage in numbers lay on their side. They, however, admitted the possibility of being compelled to assail both our groups simultaneously.

Their concentration in the Palatinate had, besides, the advantage of covering the Rhine and the countries beyond this river, extending from Basle almost half way to its mouth. They thought by taking the offensive from these positions to prevent the invasion of Germany.

The Bavarian Palatinate was therefore indicated as the most favorable zone of concentration, or base of operations.

5th. It remained to examine *whether the relative mobilization periods of the antagonists would permit this combination.*

The German system of mobilization, supplemented by a minutely prepared plan of transportation, assured the assembly of two corps, or 60,000 combatants, on the thirteenth day, and 384,000 on the eighteenth day.*

*According to the German custom, this took into account only the combatants. In reality, the Prussians had upon the frontier on the 18th day, 12 corps besides the Baden and Würtemberg troops, or together 480,000 men.

The Germans knew that our army was not able to move with equal rapidity. They also learned through the indiscretion of some one unknown, that the Emperor Napoleon III. and Marshal Niel had secretly studied the means of assembling 150,000 men at Metz on the eighth day. It was calculated by the Germans that a six days' march would be required by these forces to move from this place to the Rhine; and that upon reaching it on the fourteenth or fifteenth day, they would find superior forces in their front.

The difference in mobilization and means of transport of the two armies thus permitted the Germans to select the Palatinate as the zone of concentration.

6th. These different conclusions once established, nothing remained but to determine the manner of *grouping the forces.*

Here the work was simplified.

First, on account of the large masses assembled, the necessity arose of forming them into several armies. It remained only to decide upon the part to be assigned to each army in order to fix its effective, and consequently the number of corps which should enter into its composition.

Finally, the assignment of the various corps was to depend upon their comparative readiness.

We have previously seen how the Germans effected a formation into three armies, which were supplemented by a fourth reserve army, and that the effectives of each were limited so as not to exceed 130,000 combatants.

Such in outline was Marshal Von Moltke's *projet* of operations. While it does not form a fixed rule to be rigidly followed under all circumstances, yet in the logic with which it was worked out, it none the less offers us a model type and a precious lesson of experience. It presents this peculiarity, that, formed in 1868, it unfolded itself two years afterwards with almost mathematical regularity, and in conformity with settled anticipations.

However, it should not be forgotten that these results ought to be attributed less to the perfection of the *projet* of operations than to the superiority of the forces, artillery armament, tactical instruction, discipline, and finally the weakness of the adversary.

In order the better to understand the scope of the *projet* and the accuracy of its estimates, it is well to recall the combinations adopted in France at the same epoch.

§ 5.—*Projet* OF OPERATIONS OF THE FRENCH IN 1870.

In consequence of the events of 1866, France felt great concern over the probabilities of a conflict with Germany. After the Luxemburg incident, the apprehension being emphasized, the Emperor instructed Marshal Niel, Minister of War, to prepare a plan of army organization. This took place in 1868, at the same time that the memorandum of Marshal Von Moltke was preparing at Berlin.

This work, divided into two parts, contemplated the formation of three armies and three reserve corps, the effective, the composition, and the assembly places of which have already been indicated.

It was estimated that we would thus have, with the troops in Algeria, 489,978 men, 121,218 horses, and 12,033 wagons.

The preparation for war did not go beyond this simple division of the troops, the numerical estimate of which contained several errors. However, at this period, after due reconnaissances had been made, a plan of campaign was elaborated by General Frossard, governor of the Prince Imperial and aide-de-camp to the Emperor.

According to this plan, "the first question presented to the mind under the hypothesis of a war with Germany was this:

"*What will the enemy do at the first moment? Will he keep himself upon his general base—the Rhine—where*

he has a solid footing, and wait until France reveals her projets? Or, resolved to take an advanced position from the outset, will he come with his corps completely organized, establish himself upon the fortified bases which he possesses before our frontiers, that is to say, before Lower Alsace, and upon the front and flank of Lorraine, and attempt the immediate invasion of our country?

"The present state of mind in the Prussian armies, the confidence which their success in 1866 has given them, and which is still further increased by the superiority attributed to their armament, the hope that they will surprise France in the midst of preparations and incomplete movements, all lead us to think," said the General, "that the enemy will take the second alternative, and not leave us the initative of the attack."

As a consequence of these views, the General's report treats particularly of the defence of the country, in the following terms:

Character of the Eastern Frontier.—"The portion of our frontiers comprised, on the one hand, between the Rhine and the Moselle, and on the other, between the Moselle and the Meuse, and the Meuse and the Sambre, will be particularly threatened by the German armies. These forces acting in concert, by virtue of treaties of alliance recently concluded, will be so considerable that they may be expected to act concentrically from different sides.

"The part of the frontier between the Rhine and the Moselle is still, so far as we are concerned, in the condition where the events of 1815 and the treaties of Vienna left it. But the Germans have here assumed an attitude toward us much more aggressive and dangerous than formerly.

"Let us recall what Lieutenant-General Dode wrote upon this subject in 1837, in a report to the high commission of defense instituted the preceding year:

"'This side of France,' said he, 'is undoubtedly the most vulnerable and the most threatened. Our neighbors have always indicated it as the place of entrance most favorable to their designs, if they were to make a third invasion of our country. The works which they have erected upon the territory opposite us corroborate this estimate of their plan of attack, and serve to still further develop their views. . . . Germany tends, moreover, toward centralization, and the formation of a more compact and homogeneous body. The fusion of commercial interests which is going on under our eyes (1837) throughout this vast territory will produce, in the not-distant future, a unity of political interests which will make of this section of Europe, feeble heretofore by reason of its divisions, a very formidable whole.'"

"After thirty years, these forecasts are completely realized.

"The situation is even very much aggravated, for the Federal strongholds erected before our frontier of Lorraine and the Rhine will henceforth be in the hands of a single power, the one that will have the direction of future operations,—Prussia,—and this iron girdle which clasps us will press upon us with redoubled force.

"**The German Lines of Invasion.**—Furthermore, the existence of numerous railroads which, starting from the different passages of the Rhine, converge upon the fortified places, has created new dangers, through the facility afforded for the rapid concentration of invading troops. There is then an imperative necessity for concerning ourselves about the means of defending this frontier.

"All the forces of North Germany can be very promptly thrown upon the left bank of the Rhine by the railroads running to different points of this river.

"These principal passages are those of Maxau, 8 kilometres below Lauterburg, of Germersheim, Mannheim,

Worms, Mayence, Coblentz, Bonn, Cologne, and Dusseldorf.

"The railroad lines in communication with these different passages, and which are a menace to France, are:

"1st. *For the invasion of Lower Alsace*, the lines Rastadt-Carlsruhe-Landau and Mayence-Neustadt-Landau-Wissembourg.

"2d. *For the invasion of Lorraine*, the three lines Mayence-Kaiserslautern-Sarrebrück, Mayence-Neunkirchen-Sarrebrück, and Treves-Sarrelouis-Sarrebrück, all centering in the large railway station at Sarrebrück. These lines are prolonged upon our territory by the Forbach-St. Avold-Metz line.

"3d. *Finally the Treves-Luxemburg line*, and between the Moselle and the Meuse, the Cologne-Aix-la-Chapelle-Spa-Luxemburg line. These two lines are prolonged by rail upon Longwy *via* Arlon.

"On account of the facilities for rapid movements and for concentration which their railroads give them, the Germans would be able, from the beginning of the war, to have distinct bases of operations established immediately before our frontiers, even touching them, so to speak. These are:

"1st. *Before Lower Alsace*, Landau and Germersheim;

"2d. *Before Lorraine*, Sarrebrück and Sarrelouis, upon the Sarre;

"3d. *To the north of Lorraine*, Luxemburg.

"This is a grave situation; it calls for most serious attention, and dictates to us the proper course to pursue."

This writer supposed that the enemy would concentrate his forces in the Palatinate and in front of central Lorraine, which was his principal theatre of operations; then below Luxemburg; and that in the first phases of the struggle he would possess an effective of about 470,000 men.

He further computed that France would be able to oppose to these forces:

1st. *An army of the Rhine*, of 120,000 men, the right wing in Upper Alsace or at Strasburg, with the left wing in Lower Alsace;

2d. *An army of the Moselle*, of 140,000 men, before the *débouché* at Sarrebrück;

3d. *An army of the North or of the Meuse*, of 60,000 men, established upon the Rheims-Châlons base, the first of these cities being transformed into a place of manœuvre, whence the troops could take the railroad either to the north, into Lorraine, or upon Langres.

"In Lower Alsace," said the General, "the enemy will have Landau and Germersheim for a base; his right will extend to Pirmasens by means of a corps connecting with his army of the Sarre. His lines of attack will lead him through the mountains between Bitche and Wissembourg, and the plain between Wissembourg and the Rhine. It is probable that he will also make efforts by his right, to the west of Wissembourg, in the upper valleys of the Lauter and the Sauer, after the manner of the Allies in 1793."

Defence of Lower Alsace.—The French army of Lower Alsace ought then, at the outbreak of war, to occupy the line of the Lauter, its right at Lauterburg, its left at Wissembourg and the position *Col du Pigeonnier* upon the Bitche road.

This line of the Lauter should be only provisional; it must be abandoned if the enemy advances with superior forces.

Wœrth as a Position.—The army in falling back should execute a change of front and cover itself by the Sauerbach, which runs to Lembach and Wœrth.

"Once established upon the right bank of this stream,

it should occupy the fine position near Wœrth, which, extending along a crest to a distance of 9 or 10 kilometres, has this town and Frœschwiller as points of support. The position should be strengthened by field-works, especially upon the left bank, near the village of Gunstett."

This was the position occupied, in a contrary way, by the Austrians, in December, 1793, when Hoche threw himself between them and the Prussians, forcing them to beat a retreat, after having captured the redoubts established by them near Frœschwiller and Wœrth.

Upon this position at Wœrth, our army should be able to sustain a struggle against superior forces with the chances of success in its favor.

The General thought it would even be possible to detach a division to move across the Vosges to the support of the right wing of the army of the Moselle.

Defense of Lorraine.—The army obliged to contend with the main forces of the enemy, coming from Mayence and Coblenz, should be the most important. It should place its right wing upon the plateau between Sarreguemines and Saint-Avold, and its left in advance of Thionville.

Right wing:

It was proper to assume that the enemy would assemble considerable forces upon the Sarre, and make Sarrebrück the starting-point for his greatest efforts.

There was reason to suppose that he would invade Lorraine upon an extended front, his right taking Metz for objective, his left Lunéville, and his centre Nancy.

The French army could abandon neither Lorraine nor the western slope of the Vosges; it must then take a defensive position.

Cadenbronn as a Position.—The General, to this end,

chose "the plateau between Sarreguemines and Saint-Avold, where there was a favorable line for battle, from 12 to 13 kilometres [about 7½ miles] in extent." With its right at Sarreguemines, its centre at Cadenbronn, its left near Œtingen, trending around toward Théding, and occupying the crests at the foot of which runs the railroad from Metz to Forbach, the French army would be in condition to oppose an energetic resistance to the enemy.

This advantageous situation was indicated for the first time by General Haxo in his memoir of 1819, upon the defense of Lorraine, and recommended by various military men, especially General Schneider.

The right would be solidly supported by several earthworks upon the heights above Sarreguemines.

"The centre would extend through Rouhling and Cadenbronn, the latter the highest point of the plateau. The left, which would command the railroad and the ordinary road, would have an advance post at Forbach, and detach a division to Saint-Avold, for the purpose of preventing a turning movement by the enemy's troops coming from Sarrelouis."

Retreat upon Metz and upon the Line of the Seille.—After a battle upon the Sarreguemines-Cadenbronn position, the right wing of the army of the Moselle might be obliged to retreat. It should then fall back upon Puttelange, Sarralbe, and Dieuze, in rear of the Seille, and occupy the left bank of this river abreast of Vic.

If the left wing should find it an impossibility to follow the movement of the right, it was to retire upon Metz, where it would find the support of field works constructed in advance to transform this site into a grand *place de manœuvres*.

Successive Retreats upon Luneville and Langres.—If fortune

for a second time should set its face against the French army, and it should be forced to abandon the line of the Seille, the retreat was indicated upon Lunéville, in such a way as to hold the two railroads of the Vosges-Saint-Dié and Épinal.

We should thus reach the positions situated in rear, and, in case of need, the fortified town of Langres.

The retreat of the army of the Moselle, and its concentration at Langres with the defensive forces of Alsace, were not considered by him as manœuvres too far from the centre, by reason of the advantageous changes which the fortifications of Paris had brought about in the conditions of the struggle.

Reserve Army.—According to this plan, it was essential to have between the enemy and Paris a reserve army, which could retire upon the capital or go to the assistance of the other armies. It was proposed to establish it, at the outbreak of the war, at Rheims and Châlons.

The General foresaw that the right wing of the army of the Rhine would be opposed to a German army which would attempt first to invade Alsace, and then to move either by the passes of the Vosges upon Lorraine, which it would thus take in rear, or by the opening between the Vosges and the Jura upon Vesoul and Gray, and thence upon Langres or Dijon.

This attack was to be prevented "by a vigorous offensive. The Rhine was to be crossed at Neuf-Brisach and at Huningen, and an attempt made to separate the South German States from those of the North."

Retreat of the Troops of Upper Alsace upon Belfort, Lure, and Langres.—If the enemy, passing the Rhine, moved upon Mülhausen, our army was to occupy the position from this place to Altenkirchen, facing the Rhine and the

débouchés from Huningen and Basle, upon the heights covering the railroad and the Belfort road.

In case of a reverse, retreat was to be made upon Belfort, and its intrenched camp occupied.

The army would then receive reinforcements by the railroads from Lyons and Dijon.

If, after another failure, Belfort was abandoned, retreat would be effected by Lure upon Vesoul, an important position and a railroad junction, where it would be necessary to direct the reinforcements in advance, and to throw up field-works.

Concentration of the Resistance at Langres.—Finally, if the enemy again obliged our army to abandon its position, it would have to retire upon Langres, without relinquishing the railroad. This place would then become the centre of resistance for the entire country.

The work of General Frossard was, in 1870, communicated to Marshal Bazaine, who thought proper to dispute the opinions there expressed.

When one recurs, however, to the opening events of the campaign, he is struck by the similarity existing between the actual and the suggested combinations.

Independent of the necessity for standing upon the ground of the defensive, the positions upon which the first combats took place, the retreat of the troops from Lower Alsace upon the Vosges, and that of the army of the Sarre to Metz, had all been foreseen. We may then believe that this study was not without influence upon the dispositions made later by the French army. At all events, the memoir of General Frossard denoted a real understanding of the situation, and proposed defensive combinations which, vigorously followed, would have modified the situation in 1870 to our advantage. That it did not happen thus, was due to circumstances which form a part of our military history.

At the end of May, 1870, the views of the military authorities having assumed a different phase, a new *projet* was drawn up and submitted to certain foreign dignitaries, whose concurrence and support were desired. This *projet* was at once changed, and in its place the following combination was proposed:

The French army, the mobilization of which it was supposed could be completed in fifteen days, was to take the field on the sixteenth day. It was to form in two masses: a principal army, which was to operate upon the right bank of the Rhine; a second army upon the left bank which was to act beyond the Sarre, in the Palatinate. The latter was to vigorously take the offensive, in order to deceive the Prussians as to the real point of attack. In the meantime, the principal army was to pass the Rhine near Strasburg, separate the States of the South from those of the North, and by the promptness of its mobilization, assure itself against all serious attack upon its left flank.

It would then be able to form a junction with the Austrian army near Nuremberg, whence these two masses would be moved into Saxony, to repeat Napoleon's plan of operations of 1806. France, in the meantime, was to make a strong diversion by landing a corps on the shores of the Baltic.

This project, the result of a simple interchange of views between two high military officials, did not rest upon practical bases, but on the contrary upon erroneous data; namely, the mobilization of our army in a fortnight, the preparation of our fleets and transport-ships in a month, and the mobilization of the Austrian army in three weeks.

After July 6, 1870, events followed one another in such a rapid march that no chance was left for new combinations, and Napoleon III. returned to the *projet* of operations drawn up in May.

It consisted in assembling three armies at Metz, Strasburg, and Châlons respectively, crossing the Rhine between Strasburg and Germersheim, and pressing in between South and North Germany.*

The forces assembled in Lorraine were to march into Alsace and pass the Rhine immediately after those concentrated at the outset near the river. Those from the camp of Châlons were to march into Lorraine and take, either at Metz or Nancy, a position adapted to cover the communications.

At the same time our fleet was to land a corps upon the Baltic coast, and seize Kiel and Hamburg.

It is known how these combinations miscarried, how the project of forming three armies was abandoned, and that of employing a single army adopted in its stead; and finally, how false calculations concerning the periods of mobilization, transportation, and assemblement rendered the execution of any plan impossible.

Soon the Germans were able to take the initiative. It became necessary, on this account, to subordinate our operations to theirs, and to accept defensive battles which had not been foreseen. Then came defeat, and finally invasion.

The practical conclusions to be drawn from these facts are as follow:

1st. *Henceforth an army must always know in advance the duration of its period of mobilization and transportation to within about a day;*

2d. *It must know the same concerning the armies which it may be called upon to meet;*

3d. *As a rule, the army which is behindhand in preparation, should not think of directing the war, but rather submit to follow its course. From this time, it*

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*Testimony of Marshal Le Boeuf before the Commission of Inquiry, volume 1, p. 51.

should prepare the defense with such energy as to triumph over the offensive in the long run, and in its turn assume the rôle of the assailant.

This conclusion naturally leads to the study of defensive *projets* of operations.

§ 6.—*Projets* OF OPERATIONS OF THE AUSTRIAN ARMY IN 1866.

The Austrian *projet* of operations in 1866, unlike Prussia's of this year, had not been prepared in advance. The first council of war called to consider its elaboration, dates from the time when the relations between the two nations became so tense as to render war inevitable, *i. e.*, after the 7th of March, 1866. Hostilities commenced about three months later—on the 15th of June.

Three questions were then put:

1st. *How should the army be distributed in view of the double campaign in the north and in the south?*

2d. *When ought it to be mobilized?*

3d. *Where should the army be assembled which is designed to act against the Prussians?*

These three questions were for the purpose of determining:

The distribution of the troops;

The date of mobilization;

The zone of concentration.

They were treated one after another as follows:

1st. *Distribution of the Forces.*—The division into two armies, one in the north against the Prussians, the other to face the Italians in the south, was a necessity. It was adopted without hesitation. But, after deducting the garrison troops and troops of occupation, it was seen that there remained for the army of the North only 196 battalions, 175 squadrons, and 93 batteries. For that of the South, only 63 battalions, 25 squadrons, and 22 batteries.

Upon both theatres of operations Austria would then have a numerical inferiority, and she could count only upon a peculiarly favorable combination of events to gain the ascendency.

Preparations were then made to concentrate all efforts upon the point where the fate of the campaign was to be decided—upon the northern frontier.

To this end, the chief of general-staff asked for an immediate increase in the effectives by the fourth battalions which were in the fortresses and the fifth battalions yet to be formed. Already long delayed, this measure was adopted but two months before the opening of the campaign. To carry it out, it was necessary to make a call for 85,000 men.

2d. *Date of Mobilization.*.—Upon this subject the decisions were as fatal as they were contrary to the rules of war. The States of the Confederation had declared that they would take part against that one of the two nations which became the aggressor. The Diet decided then to await the action of the two hostile powers, before commencing preparations for war.

Once before, a similar measure had been followed by disastrous results, and had led Austria to reverses, the recollection of which was not yet effaced. The Austrian chief of general-staff called attention to this, pointing out the danger of such action. But no notice was taken of his protest, and the decision was adhered to. The Minister of War was simply advised to make such dispositions that the army might be assembled upon the points of concentration within seven weeks after issuance of the order for mobilization.

However, the armaments of Prussia and Italy were soon to hasten the dispatch of this order. It became necessary, indeed, to forward it to the Army of the South by the 21st of April.

3d. *Zone of Concentration.*—Upon this question, the

chief of general-staff reasoned thus: The Prussian forces, being the first ready, will take the offensive. The Austrian army will be reduced to the defensive. Hence it will not be able to concentrate in Bohemia, which the Prussians will enter at once. It ought, however, to leave a corps there to stretch a hand to the Saxon army, and take up position upon the flank of the enemy's general line of march. The town of Olmütz offering in this regard the best point of support, was to be the centre of concentration. This, then, was to be effected in Moravia. (*See Plate XVIII.*)

Such were, in a general way, the resolutions adopted in March. They did not constitute a plan of operations, but bases for war preparation.

General Krismanic, called to Vienna for this purpose, was charged with forming a *projet* of defensive operations upon these bases.

Following is a summary of his *projet:*

PLAN OF OPERATIONS OF THE ARMY OF THE NORTH.

1st. *Probable forces of the armies facing each other.*

The *projet* estimated the Austrian forces, those of the the contingents of the Allies, and those of the Prussians. The opposing masses seemed about equal.

2d. *Decision to remain on the defensive.*

The author believed that this decision, in every case to be lamented, would lead to the deployment of the Prussian army at the moment when the Austrians were yet on the march toward the points of concentration. If the latter's concentration could be effected at the same time as their adversary's, he believed that the offensive should be taken at all hazards, and vigorously taken.

But by reason of the measures adopted by the council of war, he counted only upon the defensive, and made this the basis of his calculations.

3d. *Zone of concentration.*

This zone should offer a point of support to the army, and cover the line of retreat upon Vienna and that capital itself.

The Olmütz-Mährisch-Trübau line, 45½ kilometres [27 miles] long, fulfilled these conditions. The various corps could be moved up to any point of this line in three days, with exception of the I. Corps, which would require five days. Each corps in this first movement was to be restricted in its cantonments to a space 8½ miles square; but rapidity of concentration was to compensate for this disadvantage.

4th. *Hypothesis of an offensive movement.*

In case the army centering at Olmütz should have time to take the offensive in Bohemia, it was to do so, gain the upper Elbe in ten or eleven days, and establish itself between Josephstadt, Gitschin, Pardubitz, and Podiebrad, with Königgrätz as a point of support.

This *projet* was in the main the one put into execution by Field-Marshal Benedek a few weeks later; but he did not recognize the favorable opportunities offered him by the defiles upon his right flank, which one of the Prussian armies was forced to follow.

5th. *Case of a concentration upon the Iser.*

The movements of the army were also regulated to apply to the case of a concentration upon the Iser.

6th. *The enemy's lines of invasion.*

The Hirschberg-Neisse zone of concentration in Silesia, was pointed out as the one most convenient for the Prussians, and one which would permit them to adopt as lines of invasion the roads debouching from Neisse and Glatz upon the Upper Elbe.

In every case, the *projet* prescribed a passive defense, while recommending that advantage be taken of the least mistake of the enemy to seize the offensive with vigor.

The various hypotheses of Prussian combinations were treated at great length.

This *projet* was adopted in its principal features, and served as a basis in deciding upon the orders for operations, dispatched a short time afterwards.

It had, as we see, a clearly defensive character, and embraced, altogether, the following points:

1st. *Estimation of the forces of the belligerents;*

2d. *Motives for taking the defensive, the dangers, the chances of seizing the offensive;*

3d. *Choice of a first zone of concentration upon the flank of the lines of invasion;*

4th. *Hypothesis of taking the offensive;*

5th. *Choice of a second zone of concentration in advance of the first;*

6th. *Enemy's probable lines of invasion.*

Like the preceding *projets*, this one should not serve as a model, for the reason that every situation of this kind presents special circumstances and requires combinations peculiarly suited to it. However, we see from this study that the resolve to hold the defensive, taken on account of political reasons, was as much feared by the leaders of the Austrian army as it was regrettable, since, from the beginning of the campaign, it placed this army in a condition of conscious inferiority.

We then reach the following conclusions:

1st. *When war is decided upon, the consideration of any matter foreign to its purpose is hurtful;*

2d. *If the concentration of one army is effected at the same time as that of the enemy, it should take the offensive with the greatest energy;*

3d. *Even when its concentration is slower, it should so act as to be able to move forward to meet the enemy;*

4th. *In defensive strategy, positions upon the flank of lines of invasion seem indicated as the most advantageous.*

The operations of the Austrians showed that the Olmütz position was too far removed from the enemy's line of operations.

A review of the Austrian plans of campaign in 1866 would not be complete without a consideration of the one adopted by the Archduke Albert.

§ 7.—*Projet* OF OPERATIONS OF THE ARCHDUKE ALBERT IN 1866.

The campaign which the Archduke Albert of Austria made in Italy, in 1866, is one of the most remarkable in contemporaneous history. It would then be well to go no further without giving the substance of the *projet* of operations which served him as a basis. At the outset, the conditions of the two opposing armies did not entirely correspond to the ordinary circumstances of modern war. Mobilization and concentration were effected more in accordance with past usages than in conformity with the rules in vogue to-day.

The Austrian army was upon the very theatre of operations before the declaration of war. The Italian army was already assembled. It had almost reached its war complement before the two countries broke off intercourse. Finally, the opposing masses had not the formidable proportions of the Prussian armies of 1866 and 1870. Nevertheless, the dispositions made by the Austrians once more demonstrate that skill in combinations gives the power, in certain cases, not only to make head against a numerically superior enemy, but also to defeat and destroy him.

Called to the leadership of the Army of the South on 21st of April, the Archduke took command on the 9th of May.

A month later, on June 10, his corps were entirely mobilized and ready to take the field. He had under his orders:

71,824 men, 3,536 horses, and 168 guns.

To these were added the troops stationed in Tyrol, in Istria, and in the various garrisoned towns, the total effective being:

190,945 men, 20,755 horses, 248 guns.

But the number of combatants did not exceed:

138,158 men, 5,273 horses, 248 guns.

The Italian army contained:

314,331 men, 33,103 horses, and 450 guns. Its combatant strength was:

270,680 men, 10,080 horses, and 450 guns. To which force should be added about 36,000 volunteers.

The Italians, after having taken measures to effect their concentration, apparently wished to turn the Quadrilateral, by operating in the lower basin of the Po. But, toward the middle of May, they modified their first dispositions, and formed their forces into two groups. The more important was stationed behind the Oglio, and the other upon the right bank of the lower Po. The bulk of the volunteers, under Garibaldi, was to operate in Tyrol. (*See Plate XIX.*)

The Archduke watched the movements of his adversaries with the liveliest attention. As soon as he perceived the faulty disposition adopted by them in forming two separate masses, he resolved to seize the interior line and throw himself upon one of these before the other could go to its aid. Owing to his numerical inferiority, this was the only plan that appeared to hold out a prospect of success.

As early as May 26, he called the attention of the Emperor to the mistake committed by the enemy, supplementing this information by a dispatch of June 3, in which he set forth the opportunities presented by the situation, and indicated the advantage which he intended drawing therefrom. This report was a comprehensive exposition of his plan of operations. Here are its leading principles:

Examination of the *Projets* of the Enemy.—Considering first of all the probable *projets* of the Italians, the Archduke expressed himself in these terms:

"The concentration of the forces of our adversary in the Duchies and upon the lower Po, might lead us to suppose that he intended to penetrate Venetia, while turning the Quadrilateral. But the position which he now occupies, assures us that he has abandoned this design, and that his present plan of operations consists in holding our forces in check upon the Mincio, with the principal portion of his army, in order to allow the remainder to cross the lower Po without danger, in the vicinity of Ferrara, march upon Padua, and join the army of the King under the walls of Verona. At the same time a force of five regiments of volunteers and a detachment of regular troops will be landed upon a point of the Venetian coast, while the remainder of the volunteer corps assembled upon the frontiers of Tyrol will attack the defiles of this country, and attempt to penetrate to the interior."

The plan of the Italians consisted, then, in executing a turning movement to the south and east of the Quadrilateral with the Army of the Lower Po, while the King engaged with the Army of the Mincio, and the remaining forces endeavored to cut the lines of communication in Friuli.

This division of the Italian army explains itself, without, however, offering a complete justification of the measure. It was difficult, indeed, to operate with 220,000 men by the lower Po, in a country cut up by numerous streams and constantly presenting defiles where heads of columns only could engage.

On the other hand, to form the forces into a single army, and advance as a unit by the Mincio, would give success by reason of numerical superiority; but as such a movement would menace none of the enemy's lines of retreat, no decisive results could be expected.

Finally, another consideration comes into view to diminish the defects in the combination of the Italians.

Each of their groups was superior to the entire Austrian army. The forces of the King reached, indeed, about 130,000 men, and those of General Cialdini more than 80,000, while the Archduke had less than 72,000.

The Italians could foresee, then, no danger of a repulse, for the reason that while reserving the Army of the Lower Po, they would begin operations with the Army of the Mincio, whose forces outnumbered the Austrians nearly two to one.

Subsequent facts proved the incorrectness of their estimation.

Dispositions made by the Enemy for the Execution of his *Projets.*—The Archduke in his report, afterwards notices the dispositions made by his adversaries to put these *projets* into execution. At this time two of their corps were moving toward the Mincio. A third was at Piacenza, near the King's headquarters. The IV. Corps, 6 divisions strong, comprising an effective of 48,000 men, was cantoned from Parma to Bologna. The volunteers were organizing themselves at the foot of the Alps. Finally, the Italian cavalry had outposts along the frontier, upon the Po and the Mincio.

Positions Taken by the Austrian Army.—To oppose these movements, the Austrians had made the following dispositions:

The V. Corps was at Verona, the VII. at Padua, the IX. at Vicenza. The various detachments charged with guarding Tyrol, Friuli, Istria, and the coasts of the Adriatic, occupied the places assigned them. It was possible to concentrate the field forces in two marches, while three would be required by the enemy in reaching Verona, the nearest Austrian position.

Selection of the Point of Concentration.—In the light of

these considerations, the Archduke was to decide upon the point of concentration. Verona was the key to the entire defensive system, and the grand depot site of the army.

It was essential, then, to remain in proximity to this fortress, in order to avoid running the risk of being cut from it, and caught between the two armies of the enemy.

From another point of view, the entrance of the Army of the Lower Po into Venetia, would probably arouse the inhabitants, endanger his communications with Friuli, and deprive him of the resources of this country. It was necessary, under the circumstances, to occupy a central position, so selected that the army would be able to march in a single day against either force of the enemy, whether toward Verona or Badia, and be thus enabled to profit by any mistakes that might be made. The line of defense, extending from Montagnana to Lonigo upon the Frassine, fulfilled these conditions.

While prepared to throw himself upon the first of the Italian armies coming within reach, the Archduke foresaw that he would have at the outset to contend with the Army of the Mincio, commanded by the King, and congratulated himself accordingly; for if, in spite of his numerical inferiority, he should be victorious, the consequences of this success would be decisive, and suffice, perhaps, to paralyze the action of the Army of the Lower Po. Besides, it was easy enough for him, if not to stop the latter, at least to retard its march with a small force, on account of obstacles of the country.

But he could assure the execution of these plans, only by very precisely informing himself of the designs and movements of the enemy, and by deceiving the latter as to his own. To reach this result, he established an extremely vigorous outpost service, in which his cavalry displayed remarkable activity.

To sum up, the *project* of operations of the Archduke dwelt upon three principal points:

An examination of the adversary's projets;

An account of the dispositions already made;

And the selection of the point of concentration.

Finally, this *projet* adopted a system of defensive strategy combined with offensive tactics, and manœuvred the Austrian army upon an interior line, starting from a central position.

It was certainly contrived with skill; and in its execution, judgment and energy were equally conspicuous.

The examples just cited permit us now to make a general recapitulation of the various considerations entering into the establishment of a *projet* of operations, namely:

1st. *Account of the forces of the belligerents;*

2d. *Study of the enemy's probable projet of operations;*

3d. *The most advantageous combinations to adopt for meeting him; selection of a base of operations;*

4th. *Plan of mobilization and concentration;*

5th. *Formation of the armies; the particular part each is to play.*

THIRD CHAPTER.

OPERATIONS.

§ 1.—OFFENSIVE.

After the *projet* of operations is completed and war is declared, nothing remains but to enter upon the active part of strategy: *the operations.*

As has previously been said, it is the art of directing these operations which constitutes strategy.

All principles laid down in definition of this art, all explanations given to establish its rules, may be summed up in a single law:

Be the stronger at the decisive point.

The combinations proposed for the attainment of this end are of two kinds only: *offensive* and *defensive.*

In practice, to be the stronger does not always mean to have the larger forces;—witness the second period of the war of 1870, in which we mustered superior numbers, but without the military training that creates discipline, and in which we were defeated.

To be the stronger does not mean to have the better arms;—witness the first period of the same war, in which our infantry armament was superior to the enemy's, and in which we were likewise beaten.

However, it is certain that with drilled troops, and armaments of equal quality, numerical superiority will be the most powerful element of victory.

Improvements in fire-arms and progress in the art of war, have in no way modified this rule of experience.

Having admitted that strategy has but one aim, victory, and but one fundamental principle, the necessity of attaining moral and material superiority, we shall

proceed to examine in turn the two series of combinations, offensive and defensive, which make up the life of armies in the field.

Here is the opinion expressed upon this subject by one of the most distinguished Prussian military writers of our day.*

"What is the comparative value of these two orders of operations, the offensive and the defensive? Both have engaged the earnest attention of strategists, and the grounds for discussion regarding them are far from being exhausted.

"Clausewitz preferred the defensive; Willisen, the offensive.

"With modern theorists, the power of fire-arms should, theoretically, lead to the selection of the defensive.

"However, the choice of one or the other depends primarily upon circumstances, and these are as varied as the caprices of fate. In fact, this choice hardly ever depends upon the will of the general-in-chief; and considering the diversity of incidents arising in war, the matter of paramount importance is to clearly understand the scope of both these modes of operating.

"Each varies according as it relates to strategy or to tactics.

"The *strategical* offensive comprehends the general plan of attack, the movements necessary to carry it into effect, and, in a certain measure, the battle, which should be delivered from such a direction as to confound the enemy and bring about decisive results.

"The *tactical* offensive, on the contrary, considers only the method of attack upon a particular point of the field of battle. The ability to take this rôle is one of the aims of strategy.

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* *The Nation in Arms*, by Von der Goltz, Berlin, 1883.

"The *strategical* defensive is the general plan of defense; the *tactical* defensive is the resistance to attack upon a chosen position.

"These premises established, it must be conceded that to-day two states equally strong and equally well prepared, would both wish to take the offensive. A few days' delay in preparation will be sufficient to reduce to the defensive the side that is the less advanced.

"The sudden and successful attacks of Napoleon have led to the belief that the offensive has always the advantage. Since the recent improvements in fire-arms, we are forced to the conclusion that, from a tactical point of view, the contrary is true.

"And yet, the offensive always possesses the most powerful means of bringing the intellectual and moral forces of its army into play. This is proved by the number of victories put down to its account. The assailant presses forward, confident in his plans and in his ability to carry them out. He selects his mark, and all his efforts take thus a settled direction. At the same time his designs, in the progress of events, become productive. The very fact that the offensive has more activity than the defensive is much in its favor, for between two adversaries equal at the outset, the more active will finally prevail.

"The defender awaits the blow, and endeavors to parry it. He must watch the enemy, and make the latter's action the regulator of his own. It is impossible for him to give his operations the same impetus. In putting his principal forces in motion, the aggressor has an exact idea of the part each group is to play in his combinations, and the precise time it will come into action, and he often brings about astonishing results. The attitude of an army moving forward is entirely different from that of one making a retreat, or even awaiting the enemy. It has more latitude of operation, and sets more

elements in motion. The commander-in-chief gives only general directions. The subordinate leaders, invited to follow the impulsion received, bring the utmost ardor into play. Each individual in the army of the offensive, even the meanest, when events lead to the decisive moment, becomes an actor in the drama. The hope of carrying the day arouses a powerful enthusiasm in the the ranks of the assailant. His chances of success constantly increase as he brings more and more of his troops into action ; and a head of column which penetrates the enemy's line, exercises an attraction upon all other portions of the army. The psychologic elements, we thus see, have as much importance in war as the material forces.

"The defensive lacks impulsion. It brings its forces together instead of pushing them forward. It leaves the soldiers under the impression that their leaders are controlled by circumstances, instead of having the power to direct them. The defensive is apprehensive regarding the issue of encounters, and has fears of its ability to preserve its line of battle intact.

"A fatal difference between the defensive and the offensive is that the former, in order to win success, must triumph at all points; while for the assailant, it is sufficient if he be successful at a single point.

"Upon the whole, the offensive possesses the greater active moral force.

"But in our age, the rôle of the attack has become more difficult. The most extraordinary efforts are necessary to decisively defeat the armed masses brought into action to-day. The general-in-chief must not only reflect more profoundly, but must venture more. In future, the increase in the forces, and the equality of their armaments, will render the fighting of battles more difficult. The next wars will probably unfold to our view hostile arrays unknown in past campaigns."

Superiority of the Offensive.—"*Everything considered, the offensive outranks the defensive.*

"This does not arise from external causes, but from the sentiments which control the springs of human action. Every new difficulty in the path of the assailant, every new incident, gives rise to new resources, sharpens his thought, and develops his spirit of enterprise, his capacity for successful action keeping pace with his aspirations. Happy the combatant upon whom fate or superior preparation for war bestows the part of assailant.

"It is only by the offensive that the object of all warfare can be realized—the destruction of the enemy's army. It is indeed recognized that the defensive should endeavor finally to take the offensive. But this proves simply that the defender would prefer the part of assailant, and that he awaits the moment when he shall thus be able to catch a glimpse of victory.

"The defender does not make war, he submits to it.

"To make war is to attack.*

"According to Jomini: 'The offensive at the beginning of operations, offers most favorable means for *making a combined movement upon a decisive point with overwhelming forces.*' 'This means,' says he, 'is to take the *initiative in the movements.*'† The general who succeeds in winning this advantage to his side, is free to move his forces wherever expediency dictates. He who on the contrary awaits the enemy, puts it out of his power to control a single combination, since he subordinates his movements to those of the adversary, and once these are in full execution, no longer has time for making new dispositions to arrest them. The general who takes the initiative has an exact idea of

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* *The Nation in Arms*, by Von der Goltz.

† Jomini, *Treatise on Grand Operations.*

what is to be accomplished: he conceals his march, surprises and overcomes an exposed wing or other weak part. He who waits may be beaten upon one point even before he is informed of the attack."

There is but one conclusion to be drawn from the above quotations: the offensive is the only rôle for the general who wishes to conquer. This principle holds good at the present time, and is especially applicable at the beginning of a campaign, if the enemy's masses are not in a condition of readiness, and if his frontier is without defense.

But, ordinarily, there will be an interval between the periods of concentration of the two armies of but one or two days, perhaps only a few hours.

In consequence, the offensive will mean simply the initiative in the first movements. Nevertheless, from what has just been said, the offensive should never be neglected when it is possible to assume it. The resulting advantages are especially of a moral nature; if they are not at once perceived, they are nevertheless real.

The Proper Period at which to Decide upon the Assumption of the Offensive.—It will frequently be possible to decide upon the strategical offensive during the period of transportation to the frontier; but oftener it will be impracticable to arrive at a determination of the matter in advance. This will be settled by each belligerent in accordance with the information which he receives concerning the movements of the other. The one that finally becomes assured of his priority in complete preparation, should immediately decide to take the offensive, and issue orders accordingly.

Let us suppose that the offensive has been resolved upon, and study the operations as they unfold themselves.

§ 2. MOBILIZATION.

The organization of the various European armies is now known. We have an insight into the general principles which serve as a guide in the grouping of forces among the different nations, in the apportionment of their effectives among the several arms of the service, the organization of their reserves, and the distribution of the *personnel* and *matériel* between their various units.

Before considering the manner in which they are put in movement against the enemy, it is well to examine the methods by which they to-day pass from a peace to a war footing. Briefly stated, the troops are assembled at points in the interior, and are then rapidly concentrated upon the frontier, ready to act.

Hence result two distinct operations: *mobilization and concentration.*

In France, before the war of 1870, the first was called *passage to the war footing;* the second, *formation of the army.* They took place simultaneously near the theatre of operations, and, so to say, at the commencement of the roads which were to serve as lines of operations, but under conditions entirely different from those coming into play at the present time.

Mobilization is the passage of all the units to the war footing. It is absolutely distinct from concentration. This principle appears trite to-day, and yet at the time of our last war, the two operations were confounded, and reciprocally embarrassed one another.

Formerly, at the commencement of the century for example, a political rupture was visible a long time in advance, especially by the power that, counting upon a superiority of military resources, had resolved to take the offensive. It then prepared its forces in secret, assembled them with equal concealment, declared war when it was ready, and endeavored to bring on hostilities at once.

To-day, with the development of intercourse, increase in the number of railroads and telegraph lines, and expansion of the influence of the press, such methods are no longer practicable. All preparations for war in view of an early offensive will immediately become known. Indeed, the character of the masses to be moved, no longer permits action under the same conditions. But if the assemblement of men and horses, in view of hostilities, can no longer be concealed, it can, on the other hand, be executed at the decisive moment with a promptness formerly unknown, and in a shorter space by one belligerent than by the other. This is dependent upon the kind and degree of preparation in time of peace.

Scope of Present Mobilizations.—With the introduction of compulsory service, the opening of war has become a more critical moment than formerly, for the nations concerned. It is no longer a question of sending against the enemy a portion of the young men organized as an active force, but the entire able-bodied population of a country is called out. From one to two millions of men must be rudely torn from the peaceful pursuits of ordinary life, from their firesides, from the dearest objects of affection. To these must be added from one to two hundred thousand horses. It is necessary to feed, group, equip, and transport these masses with all the material required by them. This is a supreme ordeal which profoundly stirs the nation, reaches all households, all occupations, suspends public life, and with feverish activity strains to the utmost all the springs of the governmental machine. For a virile people, it is the touchstone of the spirit that controls its social and military organization.

Mobilization is then essentially a gigantic work, which absorbs the life of the entire nation, and which presents the greatest imaginable complications.

Now it is nothing to raise a regiment to the war effective. Difficult, however, is the execution of that great body of measures requiring simultaneous execution: the installation of new authorities; the formation of new agencies; the organization of depots, interior garrisons, commands, special governments, and station services; the creation of new staffs from heterogeneous elements; the organization of trains, parks, convoys, and accessory field services; the assembling of horses, provisions, munitions, means of transport, etc.

A simple enumeration of the details of such an operation makes it apparent how greatly confusion is to be feared, and how indispensable it is that minute preparations be made in time of peace.

Still further reasons demand this. The mobilization must be effected as rapidly as possible, for the sooner it is finished, the sooner will the concentration be accomplished, provided the railroads lend themselves to a prompt transportation of troops. An army which concentrates upon a frontier more speedily than the enemy, possesses advantages which exercise a favorable influence upon the entire course of the campaign.

Advantages of a Prompt Mobilization.—These may be stated thus:

The belligerent that is ready first has *the initiative of the movements. Consequently he imposes his will upon the enemy.*

With equal forces, he has more chances of enlisting the first successes on his side, and of increasing thus the moral value of his army, the assurance of his troops, at the same time that he correspondingly diminishes the confidence of the enemy.

He will dictate the law instead of receiving it.

He will draw great advantage from the fact that the direction of the war rests principally with him, and he

will be able to retain control of events for a considerable period.

These considerations show to what degree mobilization and concentration are to-day essential to the success and even the existence of armies. Such a point has been reached that the duration of these operations is not counted by days, but by hours.

They must, then, at any price, be completed with the least possible delay, and to this end all means must be employed, all efforts put forth, all sacrifices made.

The mobilization of an army comprehends two essential acts: *the preparation in time of peace*, and *the execution.* The chief requisite in the former is order and system, and in the latter, rapidity.

For the purpose of insuring dispatch in the execution, it is necessary that all the details be foreseen and worked out in time of peace; and that they be so regulated that their realization will be attended by the least possible delays.

The fundamental principle accepted on this subject is to place as near as possible to the various permanent organizations, the men, horses, and material needed by them to change from a peace to a war footing, so that for each force, all the movements may be made upon a small area, and consequently require the shortest possible space of time.

Moreover, the principle of division of labor and of decentralization of the service, should be applied in this hour of supreme crisis, in amplest measure.

In France, since 1872, all has been done that the laws in force, the circumstances, and the situation of the army permitted. But all work is capable of improvement; ours certainly is. In the first place, we should endeavor not to lose sight for an instant of the possibility of a sudden mobilization. In this thought, we should ceaselessly study the best methods of execution

already known, endeavor to find those that seem the most advantageous, and propose all practicable improvements.

The best instruction which the past can furnish us on this subject, is that offered by the German and French mobilizations of 1870. It will not be out of place, then, to recall these two events of contemporaneous military history, and to set forth such incidents as are calculated to awaken interest and afford instruction.

I.—Mobilization of the German Armies in 1870.

1st. SYSTEM OF MOBILIZATION.

Experience gained in the campaigns of 1864 and 1866 demonstrated that with the masses composing modern armies, speed in mobilization was one of the first conditions of success. Therefore, since the war in Bohemia, this operation had become a subject of constant study for the Prussian general staff.

The work undertaken seemed to have a double aim: the separation of the field forces from the landwehr; the reduction of the time necessary to assemble the reserves. Moreover, since the earliest days of her present military system, Prussia had adapted the organization of her army to the requirements of mobilization. And this practical idea, which reason in default of experience should have moved her neighbors to adopt, had led her, little by little, to the creation of a powerful mechanism whose parts, set in motion during peace, worked together regularly and without friction in time of war, imparting a new impulse to her forces, and concentrating all the powers of the machinery to one supreme end—the success of her arms.

The first consequence of this system was the elaboration, in time of peace, of all the details of mobilization, and especially of the rôle of each unit, each group, each

service, each individual; the various duties had been rigorously marked out, and for a long time, every measure of military legislation brought about improvements. It is thus that the mobilization of 1866 was effected after the plans established in consequence of the reorganization in 1860. That of 1870 was carried out conformably to *projets* drawn up after the Bohemian campaign, and in accordance with the improvements to which it gave rise.

Independent of the plan of mobilization, the Prussian general-staff renewed from year to year, for the military authorities interested, an order of mobilization which remained in force from the 1st of April of one year to the 31st of March of the following year, and which indicated to each his duty from day to day for this important operation.*

Tables relating to time and manner of moving the bodies of troops, and further tables pertaining to transport trains, formed corallaries to these orders.

The mobilization rested upon the fruitful principles of the division of labor and of decentralization. Each army corps, each organized troop, each unit, each service, was mobilized as a whole, dependent only upon itself. The responsibility was thus divided among the different elements of the hierarchy, and these concurred in obtaining the greatest precision, even in the smallest details. At the first note of war, the German soldier saw in advance the course of his duties. In France, on the contrary, from the top to the bottom of the military establishment, every one was ignorant of his rôle, and awaited the orders of the supreme authority.

Usually, the German plan of mobilization commenced

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*In the words of the "Secret Instructions," "Every person in authority should know in peace what will be required of him on the order to mobilize, and must expect no further orders. All orders which have to be issued are to be kept ready in peace."—Tr.

by indicating the way in which the effectives were to be organized upon a war footing, and the measures to be taken to reach the regulation figures.

On these data were based the tables prescribing the distribution of the field forces, and the depot and garrison troops. These tables went into effect only upon the approval of the Minister of War.

The designation of the points of mobilization came next. As a rule, each group or service was mobilized in its own region.

Naturally, the headquarters of the landwehr battalion districts played a preponderating part in these combinations.

Directions concerning horses and *matériel*, and regulations governing the replacement of the military authorities,* completed these plans, which were accompanied by detailed tables and instructions.

The operations of mobilization comprehended five successive periods:

1. The call for men and the requisition for the proper complement of remounts;

2, The movement of men and remounts toward the centres of mobilization;

3. The formation of field troops;

4. The formation of depot troops;

5. The formation of garrison troops.

The call for men and horses resulted from the order for mobilization.

Notice of mobilization was at once telegraphed by the War Ministry to the commanders of the landwehr battalion districts, who were directed to summon the reserves. These commanders, by aid of the civil author-

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*The commanders of corps, divisions, etc., upon taking the field with their troops, are replaced in their local commands by temporary officials.—TR.

ities, sent out the written summonses, which are always kept ready, notifying each reservist and landwehr-man when and where to join. A delay of twenty-four hours was granted them, and by the fifth day the greater part of the reservists had reached the designated points. They were there formed into detachments and forwarded to their regiments under non-commissioned officers.

On the fourth day, the commissions for the purchase of remounts assembled at the points indicated. On the following day, the owners of horses presented themselves with their animals, which were inspected, paid for, and delivered to the officers sent to receive them.

The men and horses were in general directed upon the main bodies on the day after their arrival at local headquarters, that is, on the sixth or seventh day. In the meantime, the regiments emptied their magazines, prepared arms, clothing, munitions, provisions, etc., and organized the depot *cadres*. These operations were conducted with methodical activity, and when the reservists arrived, they were immediately clothed, equipped, armed, and incorporated. Twenty-four hours later they were prepared to take the field, or, as a rule, on the seventh day of mobilization.

This was also the time when the remounts of the new complement were received at the points of assembly. And on the eighth day, as a rule, the artillery and train teams were nearly completed.

A fundamental principle served to regulate the organization of the war effectives: the reservists must enter not only the regiment in which they received instruction, but even the same battalion and the same company. The affection developed for the flag under which he had been instructed in the calling of the soldier, and for the group of comrades of his early service, was thus kept alive, and gave added cohesion to a regiment at the outset of a campaign.

The Guard alone did not conform to the system of regional mobilization, but drew its effectives from all parts of the kingdom.

The special arms and various services received their complement of men from the whole of the corps-region in which they were located.

In this system, the calling together of the reservists to the headquarters of the battalion districts, and their dispatch to their respective regiments, required but a short space of time; and as the *matériel* was always ready at the mobilization-centres, there was a certainty that they would meet neither obstacles nor embarrassments of any kind while en route.

The assemblement thus took place without friction, without loss of time, without difficulty of any kind.

While the reservists were rejoining their regiments, it was necessary to proceed to the formation of the supplementary units.

In this respect, the infantry and cavalry had only to organize their depot troops, but the task of the special arms was more burdensome.

The artillery was obliged to prepare its munition columns, its parks, and its depots of reserve munitions.

The engineers, their bridge equipage, their implement columns, their companies of pontoniers and sappers, their railroad and telegraph sections.

The train, its supply columns, its sanitary detachments, its horse depots, ambulances, etc.

The *cadres* of these new units were in existence in time of peace, and came into active operation at the very commencement of the mobilization, aiding in the preparation of their respective groups.

When the various commands had reached their full effective, formed their depots, and organized their supplementary services, their mobilization was complete. The time required, varied according to the arm of service. In

1866, the infantry regiments of the line took from nine to fourteen days to reach a war footing; those of the Guard, from fourteen to fifteen days; those of the cavalry, from fifteen to seventeen days; and the artillery regiment of the Guard, twenty days.

Notwithstanding the rapidity of these operations, the improvements brought about since 1866 still further diminished these periods, and thenceforth infantry regiments required but from seven to nine days; cavalry, nine to eleven days; the other services, fifteen days.

After the formation of the field forces, came that of garrison troops. A part of the latter, called the *first augmentation*, were designed to act as a territorial guard; of the remainder, called the *second augmentation*, some were to take the field with the active army, others to maintain the communications, while others still were charged with the defense of fortified places. They were composed of landwehr men. These were summoned to report at their district headquarters while the last detachments of the reservists were being dispatched to their regiments. They were immediately formed into battalions, and on the day following their arrival, put in motion toward the places to be garrisoned or the designated points of concentration. They thus passed under the authority of the commanders of army corps, or the governors-general remaining in the territory, as the case might be.

Such were the general rules of mobilization for the North German troops in 1870. The States of the South had adopted the same system, had begun to apply it, and were in condition to pass to the war footing with the same promptness.

The regulation methods were, moreover, to receive an unexpected stimulus by the meddlesome instigation of the press in the circulation of an erroneous account of an insult to the King of Prussia, by our ambassador,

and finally from the popularity of a war against a people always denominated *hereditary enemies*, notwithstanding a period of nearly sixty years of unbroken peace.

2ND.—MOBILIZATION OF 1870.

Confederation of the North.—In 1870, the precipitancy displayed by France in the conduct of negotiations preceding hostilities, resulted in the almost entire suppression of the period called *preparation for war*. It was on both sides supplanted by a period of surprises, due in a great measure to the declaration of July 6, by the *Corps Législatif*, which had for immediate consequences: in France, the dispatch of warnings to various military authorities; in Germany, precautionary measures* and various preparations, entered upon July 8.

Members of the landwehr residing in foreign countries were recalled.†

The purchase of horses was effected in Belgium. Dating from the 10th, military movements were taking place in Germany on all sides. Finally, on the 13th, the 40th Regiment of Infantry, garrisoned at Treves, received orders to be ready to move in twenty-four hours.‡

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* Declaration of the King of Prussia to M. Benedetti, July 11.

† Dispatch of the Prefect of the *Bouches-du-Rhône* to the Minister of the Interior, July 10. An order for mobilization was found at Metz upon the person of a member of the landwehr of the VI. Corps who had been called to rendezvous at Breslau on July 9.

‡ Notwithstanding these preparations, the Prussian general staff observes, in the first number of its history of the war (page 47), that, "on the side of the Germans, no measure whatsoever had been adopted looking toward war," "while for a considerable time the French Ministry of War displayed great activity; that all dispositions were made for railroad transportation; that considerable supplies of forage had been accumulated; that the horses placed temporarily in the hands of farmers had been recalled to the artillery regiments," etc.

Here is the truth regarding these assertions:

The order relating to railroad transportation did not leave the Min-

It was, however, on the night of 15th of July, that the order of mobilization was sent from Berlin and Carlsruhe respectively, to the different authorities of North Germany and of the Grand Duchy of Baden.*

The last landwehr districts received it the next morning. It was distributed in Bavaria on the 16th, and in Würtemberg on the 19th.

The landwehr districts of the North had received it early enough on the morning of the 16th to immediately begin the operations ordered for the second day, that is

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istry of War until July 15, at 5 o'clock in the evening, the day after the reserves were called in. It was in the form of a letter addressed in these terms to the Minister of Public Works:

"To the end that the movement of troops and war material toward the frontier may be effected as rapidly as possible, I have the honor to beg Your Excellency to be kind enough to request the railroad companies to promptly respond to all requisitions which may be addressed to them by the military authorities for the transportation of troops, horses, material, etc."

With reference to the assertion concerning the accumulation of forage supplies, it had no foundation save the fact that Intendant-General Blondeau had, ou July 7, taken upon himself, without orders, to have siege supplies collected, principally of wheat and flour.

As to the return to the army, of the horses let out to farmers, the order for this was not given until 9 p. m. of the 16th, when a telegraphic notice was sent offering a premium of ten francs for all horses arriving before the 22d.

The only measures taken in France before the declaration of war were:

1. A dispatch addressed to the Governor of Algeria, on July 8, instructing him to hold his troops in readiness to move;

2. Instruction to the engineer inspectors, July 9, regarding the inspection of the fortified places of the North-East;

3. An order of the 11th, directing the generals to be at their posts and to ascertain if the recruiting bureaus had the orders calling out the troops, ready for forwarding;

4. An order of the 12th, calling the crews of the fleet into active service.

*The 27th Infantry at Magdeburg, and the 65th Infantry at Cologne received it on the night of the 15th. The 35th Infantry (Brandenburg) received it on the following day at 6:30 a. m.; the 108th Infantry (Dresden), at 6:15 a. m.; the 8th Hussars (Panderborn), at 7:30 a. m.

to say, the acknowledgement of the receipt of the telegraphic order, the communication of it to the civil and military authorities of the district and to the newspapers, and the summoning of the reversists and landwehr men.

While the various permanent bodies prepared for the incorporation of the reservists, the officers of garrison troops received the order to present themselves on the 21st of July, and the men of the different classes on the 19th, 20th and 21st.

On the 19th of July, the gathering of reservists at their respective district headquarters began. On the same date, the horses were taken by their owners to the commissions that were now coming into activity.

It was also on the 19th that the first detachments of reservists reached their regiments, some of which were ready to march on the 21st* a large number by the 23d, and the majority by the 24th.† A small number of others, delayed by particular circumstances, finished their mobilization on July 28 and 29. One regiment only, the 40th Infantry, on account of its special mission upon the frontier, did not receive its last complement of men until August 2.

The rules of German mobilization were obliged to make an exception, however, in the case of the contingents of the Rhenish provinces. The proximity to France had raised the fear of a sudden incursion, which had interfered with the assemblements of the reservists in the region between the Rhine and the Moselle. In consequence, the *personnel* and *matériel* of the district headquarters of the 16th Infantry Division, and its re-

*By the 19th of July there were in France only 13 departments which had summoned their reservists.

†On the 24th of July the reservists in France had not all left their homes.

servists and depots, were moved back upon the Rhine, to effect mobilization.

Another exception was made in case of the reservists who were to assemble at Sarrelouis. It was decided to incorporate them in the 69th and 70th Infantry regiments which were stationed there, in order to have upon the frontier as soon as possible, two completely equipped bodies of troops.

These peculiar circumstances did not, however, prevent the VIII. Corps (Treves) from finishing its mobilization on the 26th of July.

Upon the other frontiers, there were no changes. In a word, the military organization of North Germany permitted her to place her infantry upon a war footing in about seven days, her cavalry in ten, and her artillery in eleven.

She owed these remarkable results to the simplicity of her mobilization, and this simplicity to the system of regional recruitment.

An enumeration of the field effectives of her various masses on 31st July, will give an idea of the power for action at her command.

Considered separately, the tactical units reached the following figures:

Infantry.

	OFFICERS.	MEN.	NON-COMBATANTS.	HORSES.
Effective of a company . .	5	249	3	
Effective of a battalion . .	22	998	26	34
Effective of a regiment . .	69	3,005	95	121*
Effective of a battalion of rifles	22	998	28	40

*These figures represented the normal formations, exceptions to which were very rare.

Cavalry.

	OFFICERS.	MEN.	NON-COMBATANTS.	HORSES.
Effective of a squadron	5	150	8	170
Effective of a regiment	23	602	52	706

	OFFICERS.	TROOPS.	HORSES.
Effective of a brigade of infantry	140	6,210*	256

	OFFICERS.	TROOPS.	HORSES.	PIECES.
Effective of a division of infantry	357	15,234†	1,980	24
Effective of an army corps	816	33,429‡	9,647	84

Taken together, the mobilized troops of the Federal army gave on August 1, 1870, the effectives shown in the following tables:

Army of the Confederation of the North on August 1, 1870.

1. *Field Troops.*

	OFFICERS.	TROOPS.‖	HORSES.	PIECES.
Staffs	805	6,512	7,075	
Infantry	9,104	398,422	15,417	
Cavalry	1,840	52,320	56,480	
Artillery	1,397	55,468	51,218	1,284
Engineers	371	15,950	6,901	
Trains and Administrative Services	405	36,349	32,090	
TOTALS	13,922	565,021	169,181	1,284
		578,943		

* The non-combatants are included in this figure, as in the French army.

† The composition of the infantry divisions not being uniform, their effectives varied, but between narrow limits.

‡ The effectives of the army corps were not always the same.

‖ This column comprehends both combatants and non-combatants.

2. *Depot Troops.*

	OFFICERS.	TROOPS.	HORSES.	PIECES.
Infantry	2,314	148,776	354	
Cavalry	380	19,912	16,912	
Artillery	164	10,362	2,999	246
Engineers	52	3,458		
Trains	162	8,249	2,821	
TOTALS	3,072	190,757	23,086	246
	193,829			

3. *Garrison Troops.*

	OFFICERS.	TROOPS.*	HORSES.	PIECES.
Temporary Officials, Inspectors, Staffs, etc	1,190	10,619	580	
Infantry	3,174	135,422	5,566	
Cavalry	276	7,848	8,472	
Artillery. Batteries	99	5,022	2,025	162
Artillery. Companies	722	38,598		
Engineers	145	6,177	493	
TOTALS	5,606	203,686	17,136	162
	209,292			

Recapitulation.

	OFFICERS.	TROOPS.	HORSES.	PIECES.
Field Troops	13,922	565,021	169,181	1,284
Depot Troops	3,072	190,757	23,086	246
Garrison Troops	5,606	203,686	17,136	162
TOTALS	22,600	959,464	209,403	1,692
Effective of the *rationnaires* on August 1	982,064			

States of the South.—Mobilization in the South Ger-

*This column includes both combatants and non-combatants.

man States was completed as rapidly as in the Northern States. Although in July the new organization of their armies was not quite perfected, plans of mobilization had been prepared, and the passage to the war footing was effected without difficulty. Notwithstanding the proximity of the frontier, the district commanders remained at their posts, ready, however, to fall back at the first signal.

Grand Duchy of Baden.—This State furnished a division of field troops complete in all arms of the service, comprising:

13 battalions of 900 combatants each;
12 squadrons of about 150 combatants each;
9 batteries of 6 pieces each;
1 company of pioneers.

The war effective of this division reached:

465 officers, 17,818 men,* 6,221 horses, and 54 pieces.

Its depot troops formed:

6 infantry depot commands, corresponding to 6 regiments;
3 depot squadrons, corresponding to 3 regiments;
2 depot batteries of 6 pieces each;
1 detachment of pioneers.

Their effective reached 147 officers, 5,936 men, 930 horses, 12 pieces.

Finally, *the garrison troops* comprised:

11 battalions of infantry of 1,000 combatants each;
1 squadron;
9 companies of garrison artillery, and 6 guns.
1 company of fortress pioneers.

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* The Prussian General Staff estimated the effective of this division at 11,700 infantry, and 1,800 cavalry, figures which correspond to 13 battalions of 900 combatants each, and 12 squadrons of 150 each.

But in order to present the effectives of the two armies uniformly, it is necessary to include here the artillery and engineer troops, the troops of accessory services, and, in brief, all the *rationnaires*.

This rule will be followed throughout the remainder of this work.

A total for the garrison troops of 337 officers, 10,478 men, 887 horses, and 6 pieces.

The entire mobilized forces of the Grand Duchy of Baden were, therefore, as follow:

Army of Baden on August 1, 1870.

Field Troops.

	OFFICERS.	TROOPS.	HORSES.	PIECES.
Staffs	15	150	250	
Infantry	298	12,108	507	
Cavalry	69	1,962	2,121	
Artillery	57	2,177	2,046	54
Engineers	7	272	134	
Trains	19	1,149	1,163	
TOTALS	465	17,818	6,221	54
	18,283			

Depot Troops.

	OFFICERS.	TROOPS.	HORSES.	PIECES.
Infantry	114	4,500	8	
Cavalry	17	600	639	
Artillery	8	302	137	12
Engineers	2	133		
Trains	6	401	146	
TOTALS	147	5,936	930	12
	6,083			

Garrison Troops.

	OFFICERS.	TROOPS.	HORSES.	PIECES.
Staffs	30	187	50	
Infantry	251	8,786	402	
Cavalry	4	104	113	
Artillery	48	1,200	264	6
Engineers	4	201		
TOTALS	337	10,478	887	6
	10,815			

Recapitulation.

	OFFICERS.	TROOPS.	HORSES.	PIECES.
Field Troops	465	17,818	6,221	54
Depot Troops	147	5,936	930	12
Garrison Troops	337	10,478	887	6
TOTALS	949	34,232	8,038	72
Effective of *rationnaires* on 1st August	35,181			

Kingdom of Wurtemberg.—This State likewise furnished a division, counting all arms of the service in the following proportions:

15 battalions of infantry and rifles, each numbering about 1,000 combatants;

10 squadrons of about 150 combatants each;

9 batteries of 6 pieces each;

2 companies of pioneers.

The effective of this field division reached 524 officers, 21,950 men, 6,868 horses, and 54 pieces.

The depot and garrison troops comprised:

8 battalions, 4 of them of the active army;

6 depot squadrons;

3 depot batteries, with 12 field pieces;

4 garrison batteries;

1 company of engineers;

1 division of depot pioneers;

Depot *personnel* for each regiment.

A total of 339 officers, 14,367 men, 2,008 horses, and 12 pieces.

The war forces of Würtemberg were then as follow:

Army of Wurtemberg on August 1, 1870.

Field Troops.

	OFFICERS.	TROOPS.	HORSES.	PIECES.
Staffs	26	198	225	
Infantry	342	15,564	720	
Cavalry	59	1,635	1,765	
Artillery	48	1,878	1,678	54
Engineers	19	822	413	
Trains and Administrative Services	30	1,853	2,057	
TOTALS	524	21,950	6,868	54
	22,474			

Depot and Garrison Troops.

	OFFICERS.	TROOPS.	HORSES.	PIECES.
Staffs	48	404	70	
Infantry	182	8,602	360	
	44	2,052		
Cavalry	36	981	1,059	
Artillery	19	611	519	12
		900		
	2	84		
Engineers	4	201		
	8	532		
TOTALS	339	14,367	2,008	12
	14,706			

Recapitulation.

	OFFICERS.	TROOPS.	HORSES.	PIECES.
Field Troops	524	21,950	6,868	54
Depot and Garrison Troops	339	14,367	2,008	12
TOTALS	863	36,317	8,876	66
Total *rationnaires* on August 1st	37,180			

Kingdom of Bavaria.—Bavaria upon the war footing was able to form two army corps complete in all arms, with the following elements:

50 battalions of infantry and rifles, of about 1,000 combatants each;

40 squadrons of about 135 combatants each;

32 batteries of 6 pieces each;

6 companies of pioneers.

Their effective reached 1,778 officers, 71,345 men, 19,381 horses, and 192 pieces.

The depot troops formed in addition:

16 battalions;

10 companies of rifles.*

10 squadrons;

8 batteries with 3 field pieces each;

2 companies of engineers.

Total effective: 486 officers, 30,193 men, 2,992 horses, 24 pieces.

There remained besides, for the garrison troops:

24 battalions, 8 of which were infantry of the line, with 650 combatants each, and later 819;

1 detachment of cavalry (about ¾ of a squadron);

16 batteries;

4 companies of engineers;

In all 777 officers, 24,385 men, and 1,683 horses.

The mobilization required some changes. In the Palatinate, the Zweibrücken district called its reservists to Spire. The others formed in their own districts, ready to retire in case of attack. Those depots formed in exposed places were moved to the rear.

The total Bavarian effective upon a war footing was composed as follows:

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*The regulation effective of the infantry units was higher than in Prussia, and was soon to be still further increased.

Bavarian Army on August 1, 1870.

Field Troops.

	OFFICERS.	TROOPS.	HORSES.	PIECES.
Staffs	89	702	795	
Infantry	1,160	52,537	2,045	
Cavalry	200	5,614	5,940	
Artillery	228	6,970	7,032	192
Engineers	45	1,021	901	
Trains and Administrative Services	56	4,501	2,668	
TOTALS	1,778	71,345	19,381	192
	73.123			

Depot Troops.

	OFFICERS.	TROOPS.	HORSES.	PIECES.
Infantry	328	23,676	48	
Cavalry	50	2,400	1,760	
Artillery	60	2,224	635	24
Engineers	32	1,301	428	
Trains	16	592	121	
TOTALS	486	30,193	2,992	24
	30,679			

Garrison Troops

	OFFICERS.	TROOPS.	HORSES.	PIECES.
Staffs	171	1,000	310	
Infantry	515	18,400	960	
Cavalry	3	90	100	
Artillery	68	3,915	309	
Engineers	20	980	4	
TOTALS	777	24,385	1,683	
	25,562			

Recapitulation.

	OFFICERS.	TROOPS.	HORSES.	PIECES.
Field Troops	1,778	71,345	19,381	192
Depot Troops	486	30,193	2,992	24
Garrison Troops	777	24,385	1,683	
TOTALS	3,041	125,923	24,056	216
Total *rationnaires* on August Ist	128,964			

The total forces of the South German States upon the war footing were thus:

	OFFICERS.	MEN.	HORSES.	PIECES.
Baden	949	34,232	8,038	72
Würtemberg	863	36,317	8,876	66
Bavaria	3,041	125,923	24,056	216
TOTALS	4,853	196,472	40,970	354

Finally, a general recapitulation of the forces of the North and South German States mobilized by August 1, 1870, gives the following figures:

General Effective of the German Armies August 1, 1870.

Field Troops.

	OFFICERS.	TROOPS.	HORSES.	PIECES.
North	13,922	565,021	169,181	1,284
Bavaria	1,778	71,345	19,381	192
Würtemberg	524	21,950	6,868	54
Baden	465	17,818	6,221	54
TOTALS	16,689	676,134	201,651	1,584
	692,823			

Depot Troops.

	OFFICERS.	TROOPS.	HORSES.	PIECES,
North	3,072	190,757	23,086	246
Bavaria	486	30,193	2,992	24
Würtemberg *	339	14,367	2,008	12
Baden	147	5,936	930	12
TOTALS	4,044	241,253	29,016	294
	245,297			

Garrison Troops.

	OFFICERS.	TROOPS.	HORSES.	PIECES.
North	5,606	203,686	17,136	162
Bavaria	777	24,385	1,683	
Baden	337	10,478	887	6
TOTALS	6,720	238,549	19,706	168
	245,269			

General Recapitulation.

	MEN.	HORSES.	PIECES.
Field Troops	692,823	201,651	1,584
Depot Troops	245,297	29,016	294
Garrison Troops	245,269	19,706	168
GRAND TOTAL on August 1	1,183,389	250,373	2,046

The general effective of the German army comprised, then:

1,183,389 men and 250,373 horses.

It is worthy of note that the number of really *mobile* troops, that is to say, those put on a complete war footing, and furnished with all accessories, very much exceeded that of the field army. The garrison troops, even, included a certain number of *mobile* troops. The following table shows the composition of the effective from this point of view:

*The garrison troops are here included.

	PRUSSIA.	SAXONY.	MECKLEN-BURG.	HESSE.	BAVARIA.	WÜRTEM-BERG.	BADEN.	TOTALS.
Mobile Troops	564,300	43,471	9,170	15,104	97,572	26,812	24,294	*780,723*
	632,045							
Non-Mobile Troops . . .	323,954	15,952	2,939	7,174	31,392	10,368	10,887	*402,666*
	350,019							
TOTALS	888,254	59,423	12,109	22,278	128,964	37,180	35,181	*1,183,389*
	982,064							

II.—Mobilization of the French Army in 1870.

1st. Mode of Calling Out the Reserves.

In France, before 1870, it was customary to effect the calling out of the reserves and the formation of the armies simultaneously.

At the same time that one order returned the men of the reserve and of the *second portion* to the colors, another directed the various permanent bodies toward the frontier, and grouped them according to a table prepared in advance. This system, which had its advantages when it was a question of assembling an army of only 100,000 men, exposed the country to serious complications when it was necessary to put the whole of the national forces upon a war footing within three or four weeks. These defects, taken in connection with the feebleness of our effectives, placed us in presence of the Germans in a dangerous condition of inferiority.

There, however, existed precise rules for calling out the reserves, and through the influence of the feeling which, since 1866, had been aroused over the condition of foreign affairs, instructions in the matter had been changed and improved.

Modification of 1868.—On September 9, 1868, about six months after the promulgation of the law which had just created the *garde mobile*, Marshal Niel, then Minister of War, addressed to the military authorities new instructions for their guidance in case of war.

They radically changed existing regulations, suppressing the intervention of the sub-intendants and the prefects in the work of sending notifications to the reservists of the time and place of assembly.

Before this, the commandant of the recruiting bureau sent the list of reservists to the sub-intendant, who prepared the orders and sent them to the prefect. The latter

classified these orders by parishes, and dispatched them by post to the mayors of each canton. The mayors forwarded them to those interested. This was a very long procedure, especially in populous centres. At Lille, for example, the sub-intendant was obliged to make out 5,000 such orders.

Again, the mayors and prefects were far from offering the same guaranties as the military authorities for the accomplishment of the work.

Beginning with 1868, the recruiting bureau replaced the sub-intendancy, and the *gendarmerie* supplied the places of the civil authorities. The suppression of three intermediaries, while simplifying the operation, abridged by six or eight days the time elapsing between the dispatch of the summonses and the arrival of the reservists. Thenceforth the passage to the war footing was to occasion the following operations:

Enrollment in the Reserve.—Upon the completion of the soldier's service with the colors, his corps commander forwarded his certificate of enrollment to the commandant of the recruiting bureau, who placed his name upon the muster-rolls, and prepared his order of individual summons, in anticipation of the calling out of the reserves. These summonses were kept ready, and required only to be dated and sent out.

Calling out the Reserves.—Immediately upon the declaration of war by the Chambers, two general movements took place, extending over the entire country; one for the calling out of the reserves, the other for the formation of the army. The first movement embraced three stages: 1st, from the man's home to the recruiting station; 2d, from the recruiting station to the corps depot; 3d, from the depot to the frontier. The second movement, or that relating to the formation of the army,

included only the transportation of the troops from the garrison places to the frontier.

Operations Attending the Calling in of Reserves.—The order calling to active service was sent by telegraph direct from the War Ministry to the military authorities, to the prefects, and to the commandants of recruiting bureaus.

Then followed:

The Dispatch of Summonses to the Members of the Reserve.—The individual muster orders prepared in advance, and arranged by classes and categories, were dated and signed by the commandant of the bureau; then transmitted to the commander of the *gendarmerie*, who, arranging them by cantons and parishes, placed them in the hands of the *gendarmes* charged with their speedy distribution to the individual reserve men.

Formation and Forwarding of Detachments.—This order indicated to the soldier of the reserve, the day on which he was to report at the department rendezvous. The dates were so calculated as to avoid all delay.

The reserve men once assembled at the rendezvous, were formed into detachments under direction of the officers and non-commissioned officers sent from the regiments to receive them, reviewed, and forwarded by rail to their depots.

Incorporation of the Reservists and Dispatch to their Regiments.—Upon reaching the depots, these men were incorporated, clothed, equipped, armed, and sent as rapidly as possible to their regiments, under conduct of the non-commissioned officers of their respective groups.

These operations, very simple so far as the military authorities were concerned, in execution produced many

complications, caused by the dispersion of the active forces, the reserves, and the magazines over the entire territory.

Inconveniences of the System.—The conspicuous feature of this system was the wide dispersion of the different elements to be grouped together on the day of danger. This peculiarity, however, had its reason.

There was a benefit in composing regiments of men of equal physical aptitude, in that by such an arrangement was obtained a homogeneity which imparted cohesion to the troops.

On the other hand, a change of station almost always separated the troops from their depots.

In consequence of these changes, a regiment stationed in the North might have its depot in the South, and receive its contingents from the East, the West, or the South-West.* In this case, the calling out of the reserves would occasion numerous unnecessary journeys: the detachments, converging first toward the south, would surge back again toward the north or toward the frontier. These cross-movements applied to all the various bodies of troops without exception. Those regiments which were at their proper depots upon the breaking out of the war, had to submit to these influences also, for when the reservists had begun to arrive at the depots, the active portions were already in the zone of concentration.

Some of the infantry regiments were at considerable distances from their depots. The 32d, sent to Châlons, in 1870, had its depot at Ajaccio; that of the 86th, then at Lyons, was at Saint-Malo; that of the 13th, at Béthune, was at Romans; of the 16th, at Sétif, was at Puy; of the 98th, at Dunkirk, was at Lyons; and that

*This rule for the distribution of the contingent is still followed. A regiment in the vicinity of Paris, for example, receives its recruits from Brittany, from the North, and from the Eastern frontier.

of the 17th, at Lyons, was at Foix, etc. But it was especially the wide distribution of the members of the reserve to all points of the country, which caused the greatest delay and embarrassment. It first of all imposed a considerable increase of work upon the recruiting bureaus, and obliged them to form an excessively large number of detachments, a systematic account of which could be kept only with the greatest difficulty. That of the Guard, for example, had 47 of these: 28 of the first *portion* and 19 of the second.

These movements took place at the same time in 86 recruiting bureaus, and extended to all the various units. Three or four thousand detachments were spread over the surface of the country, obstructing the communications, crossing each other's paths at every turn, and coming into collision at the railway stations, at first with the masses of troops directed toward the frontier, then with the *matériel*—wagons, horses, munitions, and supplies—converging from the regional or other depots toward the point of army formation.

From all this there resulted inevitable disorders, still further increased by the wanton conduct of many of the men in abandoning their detachments, and wandering in bands around the large railway stations, living on charity, escaping from all proper authority, and setting their comrades a pernicious example.

Under these circumstances, nothing was more uncertain than the execution of the orders calling forth the reserves; and it was quite as difficult to calculate in advance the time necessary for this operation as to foretell the resulting deficiencies in the effectives.

And yet the circumstances of these war movements had been thoroughly considered by the government.

It was calculated that from the time of sending the order for mobilization, an average of five days would be necessary for the reception of the individual sum-

monses, seven days for the men to put themselves *en route* and reach their depots; three days to arm and equip themselves and to join their regiments. Two additional days were allowed in case of the recruits of the second portion.

This period of fifteen days in passing to a war footing seemed a large enough estimate, but it proved everywhere insufficient. This arose from the fact that no one could appreciate in advance the scope of the exceptional situations which an unexpected declaration of war, and the sudden displacement of all the forces in the country, were to create. One example will suffice to make this clear.

The reserve men of the 2d regiment of Zouaves, living in the North, were obliged to proceed to Marseilles, and from there to Oran, then to return to Marseilles, and finally to rejoin their regiment in the East, thus traveling 2,000 kilometres [1,200 miles] by rail, and making two sea voyages, of three days, before reaching their post. The length of time consumed in their numerous journeys, and the variations in their effectives, must necessarily have escaped all forecasts.

In consequence of this system, regiments *en route* to their place of formation often encountered their reserve detachments going in opposite directions.

In case of defeat, it was probable that the active portions would be obliged to change their positions before having received their reserves, and that the latter would never succeed in finding them.

Indeed, this actually happened. On July 18, 1870, a detachment of the 53d regiment of the line, leaving Lille to rejoin its regiment at Belfort, arrived at the depot at Gap on the 28th, having still five days' journey to make on foot; remained there until August 30th; was stopped at Lyons because the location of its proper regiment was no longer known; was directed upon Orleans in

the first days of October to assist in the formation of the 27th marching regiment (*régiment de marche*); arrived there on the 11th, and was forced into battle before even having found its new colors. Setting out on the 18th of July, it did not enter the line until three months afterwards, and during this time, the 53d, for which it was at first destined, had disappeared in the storm.

Forming the Armies Upon the Frontier.—To the inherent difficulties attending the calling forth of the reserves, were to be added those arising from the assemblement of the troops upon the frontier. This operation gave rise to measures of preparation and of execution.

1st. *Preparatory Measures*—A table showing the composition of the army was drawn up by the Ministry a few days before the declaration of war, simultaneously with the preparation of the orders for the movements of the various bodies of troops, and the service letters for the generals, intendants, etc.

2d. *Measures of Execution.*—The dispatch of the orders for the various movements followed the issuance of those calling out the reserves. The generals, the staff officers, and other officers absent from their commands, repaired individually to the frontier, to the points indicated for the concentration, while the regiments returned to the depots those men not fit for service, completed their war *cadres*, their supplies of provisions and munitions, and proceeded by rail or on foot to the points designated, where they found their generals, received orders, and were grouped into brigades, divisions, etc.

Difficulties of these Formations.—There came a time, then, when the grand units seemed formed, while in reality they had hardly begun to arrange their administrative

services, to receive their reserves, their complements of horses, their means of transportation, and their field munitions and supplies.

From that moment, control of the time necessary for their final organization, in part at least, slipped from the hands of the leaders, and lodged principally with the central administration, which alone possessed the power of giving orders in the interior. But this office was frequently intrusted at the last hour to a new minister little acquainted with the requirements of the occasion, the resources at disposal, and generally the means to be used to finish the work commenced; and thus additional complications arose.

In presence of forces mobilized after the manner of the Germans, and sure to be ready for battle within eighteen days, our army was exposed to surprise and attack in the midst of the period of formation, without sufficient preparation, without cohesion, and perhaps even without its war effectives.

Such was the mechanism of the passage to the war footing. A recital of its details no doubt suggests painful reflections, but it is still more distressing to think that the dangers to which it exposed the country had in vain been pointed out by several generals who foresaw the terrible catastrophies in the midst of which the efforts of their soldiers would prove powerless.

2D. PASSAGE TO A WAR FOOTING.

The Order Calling to Active Service; and New Formations.—On July 14, 1870, war having been decided upon in ministerial council, a telegraphic order was issued at 4:40 P. M., calling into active service the recruits of the 2d *portion* and the soldiers of the reserve.*

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*On July 1, these contingents, numbering 173,507, were composed as follow :

If this order had stood by itself, its execution would have been relatively easy; but it was trammeled by other measures, for the most part improvised to create new formations.

The next day, July 15, in receiving notification of the calling out of the reserves and of the volume of work falling upon their depots, the infantry colonels were ordered to form a fourth battalion of four companies, and to prepare the *cadres* of two companies designed to be kept at the depots. According to this plan, the infantry regiments were to be thus composed: 1st, of an active portion ready to proceed to the east, with three battalions of six companies each; 2d, of a fourth battalion of four companies; 3d, of a depot battalion of two companies. The active portion counted in its ranks the men with the colors and the reserves called in, that is to say, a contingent of conscripts of eight months' service, reserve contingents unpracticed in the use of the new rifle, and five small contingents of drilled men.

The fourth battalions were to receive only reserve men of the 2d *portion*. These had served but five months.

On the 15th of July a new order directed infantry regiments to place all disposable men in their active battalions.

On the 16th, the *garde nationale mobile* of the 1st, 2d,

Classes.	Soldiers of the Reserve.	Recruits of the 2d portion.	Total.
1863	26,071	33,567	59,638
1864	30,000	110	30,110
1865	3,962	54	4,016
1866	917	23,372	24,289
1867	299	25,989	26,288
1868	133	29,033	29,166
Totals	61,382	112,125	173,507

The men of the 2d *portion* of the 1864 and 1865 classes had been called to active duty on May 20 and June 15, 1867.

and 3d *coprs d'armée** was called to active duty, and the men were assembled at the department rendezvous. Another decree organized a *depot cadre* in each artillery regiment and train.

On the 17th, the call to active service was extended to the other army corps, and instructions given to make enlistments for the entire period of the war.

On the 18th, it was decided to form regiments of *garde mobile* with two, three, and four battalions, commanded by lieutenant-colonels. The decree urged the ultimate creation of brigades of two or three regiments of *garde mobile*, and of divisions of two brigades entrusted to generals on the reserve list. At the same time the provisional composition of the artillery of the *garde mobile* was fixed at six batteries.

On the 19th a new decree prescribed the organization of the *régiments de marche* from the fourth battalions, three to each.

On the 20th appeared the order calling to the colors the contingent of 1870, which was estimated at 140,000 men. On the 24th was ordered the formation of six provisional regiments of *garde mobile*, from the eighteen existing battalions.

On the 26th an imperial ordinance authorized the formation of foreign battalions; another placed the customs corps at the disposal of the Minister of War.

Finally, on July 28, the organization of the companies of volunteer *francs-tireurs* was decreed. These, during the continuance of the war, were upon the same footing as the regular troops.

The majority of these decrees, which were designed to be executed at the depots, had the effect of increasing the difficulties. However, on the night of July 14,

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* France and Algeria were then divided into seven grand commands, called *corps d'armée*.

these complications had not yet appeared. It was not until the morning of the 15th that the recruiting bureaus began the task of dispatching the individual summonses. Commencing on the 18th, the movement was continued without interruption until the 28th, in the midst of divers embarrassments.

On the first day, three departments only, the North, the Cantal, and the Cher, forwarded their reserves, to the number of 7,889 men.

On the succeeding days, the departures took place at the following rate:

July 19	10	departments	forwarded	14,331 men.
July 20	16	"	"	25,077 "
July 21	15	"	"	22,597 "
July 22	23	"	"	45,542 "
July 23	14	"	"	22,629 "
July 24	3	"	"	5,471 "
From July 25 to July 28	5	"	"	21,484 "

All these movements give a total of 163,020 men, a force less by 10,487 men than the number set down on the list of effectives on July 1. It had taken ten days to put the troops *en route*. The recruiting bureaus which had been the longest delayed were those of Ille-et-Vilaine, which terminated operations on July 25; of the Loire and of Corsica, which finished on July 26; and of the Côtes-du-Nord, which required until the 28th. The journeys of the men called out were made by rail, or on foot when their points of destination did not lie on the railroads. Certain groups had thus a march of several days to make. The greater portion, placed under a garrison officer or a non-commissioned officer of the reserve, reached their destination without loss of time. But this was not the case with all; for, from the 19th, the obstruction at the railway stations of the Eastern system began, and the confusion increased more and more to the end of the month.

At certain points, individual men who had left their detachments on various pretexts, added still further to the embarrassment of the railroads. At other points, the soldiers who presented themselves at the ticket offices without regular requisitions were refused tickets, and in consequence forced to wander about the stations without order or direction.

Condition of Affairs at the Depots.—In the depots the reservists found, as a rule, clothing, shoes, and arms, in sufficient quantities. But the equipage was not always adequate to supply all wants. The camp equipage especially left much to be desired. The demands made upon the central administration toward the end of July, showed that a great number of corps magazines had not been sufficiently supplied in this regard.

When the reserves joined their depots, the authorities there were already overburdened by the multiplex minutiæ of mobilization. Independent of putting the active battalions upon a war footing, the details of which fell in great part upon them, they had to arrange for the formation of the fourth battalions, create the two companies composing them, prepare the enlistment papers of volunteers, etc. To add still further to the inconveniences of the situation, the reserve detachments arrived irregularly, and sometimes with a force of from 200 to 300 men each.

The depot of the 54th regiment of the line, at Napoléon-Vendée, had to provide for twelve detachments, varying in strength from 60 to 200 men, which had been sent there by the recruiting bureaus of Côtes-du-Nord, Aude, La Manche, Gard, Finistère, Dordogne, Loir-et-Cher, Mayenne, Charente-Inférieure, and LaVendée. In the meantime, on July 21, the active portion left Condé for Thionville, remained there until the 24th, and proceeded then to the occupation of Colmen, in the neigh-

borhood. A statement of the variety and uncertainty of these operations gives, however, but an incomplete idea of the difficulties of this short period. They resulted in impeding the passage to the war footing almost everywhere, and in delaying the reception of their reserves by the various regiments. Beginning with 27th of July, the forces on the frontier finding their formations incomplete on account of the feebleness of their effectives, began to complain. Orders were then sent by the Ministry to hasten the departure of the reservists from the depots. By July 30, 142 detachments, varying in strength from 200 to 400 men, had come to increase the army by 38,678 soldiers. This was the entire yield during two whole weeks of the system of mobilization in vogue.

But at this moment, the railroads were found, in their turn, obstructed by the transports; and the embarrassment was such that the troops sent by the depots to the active portions were necessarily delayed. Some detachments even found it impossible to reach the army. As a result, certain regiments were not able to bring the war effective of their battalions to 800 men. In the composition of the army of the preceding years, it was thought that active battalions of 900 men each could be counted upon. However, on August 1, the most favored regiment had but 2,417 men in ranks; while the feeblest did not contain more than 1,207 *rationnaires*, with battalions of 400. The average strength of a regiment was 1,554 men.

At this date the Army of the Rhine had reached a total of 262,295 *rationnaires*.

This figure was to be increased by the accession of reserves, which was to continue even after the opening of hostilities, and which raised the effective, notwithstanding the losses in the first conflicts.

Before the 6th of August, the increase in the effectives through the incorporation of reservists and the formation of the different services, was as follows:

	Men.	Horses.	Increase.
July 27, 1870	187,485*		
July 28, 1870	200,795		13,310
July 29, 1870	201,256		461
July 30, 1870	231,008		29,752
July 31, 1870	240,386	51,184	9,378
August 1, 1870	251,127	53,991	10,741
August 2, 1870	255,249	54,945	4,122
August 3, 1870	260,868	57,567	5,619
August 4, 1870	267,280	60,497	6,412
August 5, 1870	269,676	61,015	2,396
August 6, 1870	272,673	63,435	2,997
Total increase from the 27th July to 6th August			85,188

By subtracting from this sum the number of men already belonging to the active force who arrived between the extreme dates, we have the number of reserve soldiers who joined up to August 6. It is thus seen that twenty-two days after issuance of the order for mobilization, scarcely one-half the men borne upon the rolls had been assembled.

From this time it is impossible to follow the detachments sent by the depots, or to count the reservists who actually took their places in ranks. Those detachments leaving their depots after the battles of August, saw their effectives perceptibly diminish in consequence of some of the soldiers stopping *en route* or entering the hospitals. The latter were often sent back to the depots; and there were others, who having left their department on the 18th of July, were not able to enter the line until the beginning of December—sad example of the weaknesses springing from defeat, the recollection of which alone should suffice to prevent its recurrence.

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* These figures are taken from the reports signed by the corps chiefs-of-staff. But from various circumstances, loss of documents, absence of means of verification, etc., it is not possible to affirm their exactness to within less than a thousand men.

3RD. FORMATION OF THE VARIOUS ARMY CORPS.

On July 14, 1870, the date of the order calling the various classes to active service, the table of army composition was prepared. It was based upon the estimates of 1868, renewed in 1869, and which had been made on the hypothesis of the eventual formation of three armies.

But, at the last moment, the *projet* drawn up by Marshal Niel was abandoned. His desire was to place two armies upon the offensive, on the Sarre and the Lauter, and to hold the third in reserve at Châlons. The Emperor ordered, as we have seen, the formation of a single army, designated the Army of the Rhine, placed under his own command, and composed of seven corps, to which were added the Guard and the general reserves of cavalry, artillery, and engineers.

It was to assemble upon various points near the frontier, group there its tactical units, and there receive its reserves.

But the majority of the regiments not having been assigned beforehand, it was necessary to follow the methods of the past, and to improvise new commands throughout.

Beginning with the 15th, the Ministry issued orders to the chiefs of the different services, the staff officers, and the generals, to hasten to the centres of assemblement near the frontier. These officers were, as a rule, unacquainted with each other, and arrived from all sides at the same time, each ignorant of the whereabouts of his subordinates.

This converging movement of *personnel* and *matériel* toward the East, obstructing in its course the detachments of reservists *en route* to their depots, led to stoppages and confusions often difficult to control.

In fixing the composition of the army, the Ministry endeavored to continue the various regiments under the

leaders who already commanded them. It was thus that the troops from Africa were given to Marshal McMahon, then governor-general of Algeria; the Paris and Metz troops to Marshal Bazaine, then commander of the 3d Corps at Metz; those of the North, to General de Ladmirault, commander of the 2d Corps at Lille. But, in most cases, leaders and soldiers were left to themselves to establish those mutual bonds of confidence so necessary to the success of operations.

Strasburg, Saint-Avold, Metz, Thionville, Bitche, Châlons, Belfort, and Nancy, were chosen as the first points of formation of the 1st, 2d, 3d, 4th, 5th, 6th, and 7th Corps, and the Guard. But on July 24, the necessity for nearing the frontier, and of establishing a more intimate relation between the corps guarding it, led to a modification of this disposition. The 3d Corps had Boulay assigned to it for point of concentration, instead of Metz; the 5th, Sarreguemines, in place of Bitche; and the Guard was to assemble at Metz, instead of Nancy.

The service letters and the orders of movement, dispatched for the most part after July 15, as a rule indicated only the first localities, and assigned the generals to command without indicating precisely where their troops were to be found. From this resulted several surprises and much dissatisfaction. It was also thought advisable to abandon the principle of equal army corps, for the purpose of giving the marshals larger commands than the generals of division.

The zone of concentration extended from Thionville to Belfort, upon a broken line of about 265 kilometres [about 165 miles], leaving gaps of considerable extent between certain corps. The reasons for this choice have already been explained.

Composition of Corps and Divisions.—Finally the composition of the grand tactical units was fixed according to the following rules:

The Guard preserved its peace formation. The army corps were to comprehend three or four divisions of infantry of two brigades, each brigade of two regiments. Generally a battalion of light infantry was attached to each division.

The divisions contained thirteen battalions of infantry, two battalions of light artillery, 1 mitrailleuse battery, a company of engineers, and a train detachment.

The army corps had, in addition, a division of mixed cavalry of two or three brigades, each composed of two or three regiments; two horse-batteries (*canon de* 4*) accompanied each cavalry division.

The reserve artillery of the army corps comprised four batteries (two of *canon de* 4 and two of *canon de* 12), and, according to the strength of the corps, two or three horse-batteries (*canon de* 4).

The engineer reserve of the corps was composed of from one to two and a half companies of engineers, according to the number of divisions.

The three reserve cavalry divisions had the same composition as those of the army corps.

The general artillery reserve was to be formed into sixteen batteries (8 batteries of *canon de* 4 and 8 of *canon de* 12).

The general engineer reserve was to include one company of sappers, one of miners, one of telegraphists, and one of railroad troops.

Finally, trains, administration troops, litter-bearers, and workmen, were attached to the divisions and corps according to the needs of the service.

The 2d Corps, assembled in the camp at Châlons under orders of General Frossard, led the movement to the front. Its brigade of heavy cavalry, composed of the

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*The *canon de* 4 and *canon de* 12 correspond very nearly to 8 and 24-pounders.—Tr.

1st and 4th cuirassiers, left it to become part of a division of Reserve Cavalry forming at Lunéville.

2d Corps.—General Frossard having at 11:30 P. M., July 15, received the order to move his corps to Saint-Avold, the 1st Division started at 5 o'clock P. M., of the 16th, and reached its destination on the morning of the 17th.

The 2d Division, starting on the 17th, was at Saint-Avold on the 18th. The Cavalry Division arrived on the same day, and the 3d Division during the night of the 18th or the morning of the 19th. The artillery and different services followed.

The movement terminated on the morning of the 19th, except for the administrative services, the organization of which was to be completed later.

This corps numbered 24,965 men at Châlons on the 15th; but it sustained a reduction in consequence of the departure of its heavy cavalry brigade, and on the 28th of July presented an effective of only 23,430 men. It then occupied Saint-Avold, Forbach, and Bening. It comprised 39 battalions, three of which were chasseurs, 18 squadrons, 72 pieces of artillery (*canon de* 4 and *de* 12), 18 mitrailleuses, 4 companies of engineers, and 1 detachment of pioneer sappers. On the 1st of August it was nearly complete, and comprised 1,172 officers, 27,956 men, and 5,016 horses.*

The other army corps effected their concentration simultaneously, but less easily than the 2d.

Imperial Guard.—The Guard, however, being completely organized, had only to await marching orders. It was stationed at Paris and in the vicinity, under command of General Bourbaki. It comprised two divisions of in-

*The effectives represent *rationnaires*.

fantry and one division of cavalry of three brigades—one each of heavy, light, and line cavalry. Its other arms and services were already constituted. The order of march reached it on the 17th, and the movement commenced on the 21st, ending on the 25th at Nancy, where it received instructions to proceed on foot to Metz. This march, effected in two days, ended on the 28th, the entire corps on this date going into camp at Metz, Ban-Saint-Martin, and on the island of Chambière.

Composed of select troops, the officers, the *cadres*, and all the elements of which had long been acquainted with each other, the Imperial Guard executed its assigned movement in order and without difficulty. However, on the 28th of July, the day when the Emperor placed himself at its head and took command of the army, it had yet neither its reserves, which were small, nor its administrative services, which did not join it until after the 30th. It required then ten days in which to take post upon the frontier in a fully equipped condition. It had then 24 battalions of infantry (one of them chasseurs), 30 squadrons, 60 pieces (*canon de* 4 and *de* 12), 12 mitralleuses, 3 companies of engineers, and 1 train squadron.

On August 1, its effective was 1,047 officers, 21,028 men, and 7,304 horses.

1st Corps.—The formation of the 1st Corps, designed to cover Alsace, was a matter of the greatest urgency. This could not, however, be entirely completed.

There were attached to it, troops of the East and of Algeria, with some elements drawn from the North and South. This corps, commanded by Marshal McMahon, was to have four divisions of infantry and one of cavalry, the latter in three brigades.

Its movement began on the 16th July, led by the 1st Division, which was formed at Strasburg from the gar-

rison there, the 45th regiment of the line, which arrived from Belfort, and the 1st regiment of Zouaves, which, embarking at Algiers from the 16th to the 19th, reached Marseilles on the 23d, and arrived at Strasburg on the 25th.

On the 26th, without awaiting either its reserves, which were to be directed upon Strasburg, or its administrative services, which were not yet formed, the 1st Division, 9,190 men strong, commanded by General Ducrot, was sent by Marshal McMahon to Frœschwiller, for the purpose of there watching the frontier of the Lauter. It was to complete its organization at this place.

The 2d Division, which was to receive troops from Besançon, Langres, Neuf-Brisach, and Blidah, commenced its formation at Strasburg, and finished it at Haguenau, where it had its infantry assembled on July 28. Its artillery, its reserves, and its administrative services were not able to join it until later. On July 28, it occupied Haguenau with 7,250 men.

The 3d Division, which received its forces from Toulouse, Marseilles, and Oran, beginning its formation on July 21, did not complete it until the 30th, at Strasburg. On this date, it had also received a large portion of its reserves, and counted an effective of 8,044 men.

The 4th Division was to receive its troops from Saint-Omer, Toulon, Montpellier, and Constantine. Its infantry included the Zouaves and the Algerian sharpshooters, whom the order for formation found assembled at Philippeville and Bône. The movement of its various bodies commenced on July 17, and was not ended until August 3; but by the 28th of July, the infantry regiments had nearly all assembled. The reserves and accessory services did not arrive until later, and not without experiencing certain difficulties.

This division—which upon quitting Strasburg, on

August 3, was to leave behind one regiment, the 87th, as a garrison—contained, on the 28th of July, 8,370 men.

It was intended that the division of cavalry charged with covering the concentration of this corps, should assemble early and occupy various points near the frontier. But its 1st brigade did not arrive until 24th July. Its 2d was still further delayed, arriving (except the 10th Dragoons) on July 28 and August 5. Its 3d reached the place of formation on the 26th and 29th July. The division was not assembled until the 30th of July, when, with an effective of 3,671 men, it occupied Soultz, Haguenau, Strasburg, Schelestadt, and Brumath.

In brief, then, the 1st Corps had only 34,660 men on the 28th of July. It had nearly reached completion by August 1, aggregating 1,651 officers, 40,165 men, and 8,143 horses.

On this date, it was composed of 52 battalions, 4 of them chasseurs, 26 squadrons, 96 pieces (*canon de* 4 and *de* 12), 24 mitrailleuses, 5½ companies of engineers, etc.

This corps had required thirteen days to reach a state of comparative readiness, and eighteen to finish its organization.

3d Corps.—The 3d Corps, placed under command of Marshal Bazaine, was to receive its troops from Paris, Metz, and Nancy. It comprehended four divisions of infantry, and one of cavalry in three brigades.

Its Paris troops were already formed in time of peace into active divisions, but without artillery, engineers, or accessory services. This organization was to favor concentration, which was commenced on July 17th by the 3d Division, and terminated on the 21st. The 4th Division was formed on the 19th, from the troops stationed at Nancy and Metz.

The Cavalry Division, composed of regiments coming

from Versailles, Auch, Cambrai, Lille, Abbeville, and Maubeuge, was formed on July 23.

On this date, the various elements having assembled, the corps was moved to Boulay, near the frontier, where it was completed by the arrival of its reserves and its different services.

It now contained 52 battalions, 4 of them chasseurs, 31 squadrons, 96 guns (*canon de* 4 and *de* 12), 24 mitrailleuses, 5½ companies of engineers, and 1 detachment of pioneer sappers.

Its effective, which was 33,910 men on July 27, had increased by August 1 to 1,704 officers, 41,574 men, and 9,810 horses.

On August 6, it numbered 43,721 men and 9,573 horses. But it did not approach completion until about the 13th of August.

4th Corps.—The 4th Corps, commanded by General de Ladmirault, was to be formed at Thionville with the garrisons of the North and North-east. It was to receive, in addition, a battalion of *chasseurs à pied* from Rennes.

Its Cavalry Division was the first to complete its regiments, which were ready by the 20th of July; then came its 3d Infantry Division, which had received all its regiments by July 22. Those of the two other divisions arrived on the next day, the 23d.

Then, pursuant to orders of the 24th from the chief of general-staff to move out from Thionville, approach the other army corps, and watch the frontier, the 4th Corps, without awaiting the arrival of its reserves, pushed its 1st Infantry Division, with its brigade of light cavalry, to Sierck, and its 3d Division to Kedange.

By July 28, this corps had organized an effective of 25,040 men, divided into 39 battalions, 3 of which were *chasseurs à pied*, 18 squadrons, 72 guns (*canon de* 4 and *de* 12), 18 mitrailleuses, 4 companies of engineers, and a company of pioneer sappers.

But it had not yet received its reserves, nor the different services required to complete it.

By August 1, its elements had nearly all been assembled, raising its effective to 1,208 officers, 27,702 men, and 5,536 horses. But it was only towards the 13th of August that its formation was completed.

Six days were thus required to assemble its permanent forces, and nearly twenty-seven days to call in the reserves and complete the change to a war footing.

5th Corps.—The active divisions of the army of Lyons, already formed in time of peace, but lacking the special arms and accessory services, were designed to form the 5th Corps at Bitche.

The 5th Division only, was to assemble at Strasburg.

The corps command was intrusted to General de Failly (aide-de-camp to the Emperor), who, in 1867 had under his orders at Mentana, a small corps complete in all arms of the service.

The assemblement of these various tactical units was made easy, as in the case of the 3d Corps, on account of their peace formation; and although there were joined to them a regiment from Toulouse and two from Paris,* the movement, begun on July 16, was terminated on the 20th.

The 1st Division had all its parts at Bitche on the 18th of July; the 2d Division, on the 19th; and the Cavalry Division on the 20th.

The 3d Infantry Division had also assembled its parts at Strasburg on the 20th.

The 5th Corps had not yet completed its formation, when, in consequence of information sent to Paris respecting the first movements of the enemy, the chief of general-staff, on the 23d of July, ordered a deployment of

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* The 5th Hussars and the 12th Chasseurs.

our forces from Sierck to the Vosges. General de Failly was to direct upon Sarreguemines the two divisions which he had at Bitche, and upon the latter place his 3d Division coming from Haguenau. The execution of this order began on the 24th.

By the 28th, the 5th Corps occupied these points, connecting by its left with the 2d Corps; but it had not yet received its reserves nor its accessory services, and could not be considered in any degree complete until August 5.

On July 28, indeed, it still contained but a weak effective, which, however, increased rapidly, and on August 1 reached 1,174 officers, 26,243 men, and 5,527 horses. It comprised 39 battalions of infantry (3 of them chasseurs), 18 squadrons, 72 guns (*canon de* 4 and *de* 12), 18 mitrailleuses, 4 companies of engineers, and a detachment of artificers.

6th Corps.—The 6th Corps, under Marshal Canrobert, designated to serve as reserve, received orders to form its divisions at Châlons, Soissons, and Paris, and then to concentrate at Châlons. It was to receive its troops from Sétif, St. Etienne, Bourges, Limoges, Périgueux, Blois, Angers, Tours, Bordeaux, Lille, Caen, Rouen, Cherbourg, Lorient, Nantes, and Brest.

Notwithstanding this diversity of points of departure, its elements were assembled in the usual way.

The 4th Division composed of troops from Brittany, was the first to form. It brought together its infantry by July 21, and replaced at Paris those divisions that had gone to the front.

On the 24th, the 3d Division at Soissons, having received its regiments, set out for Châlons, where it did not assemble, however, until the 5th of August.

On the 25th of July, the troops of the 2d Division arrived at Châlons simultaneously with those of the 1st.

The Cavalry Division was formed with regiments from the West, except one which arrived from Tarascon. Its 1st and 2d brigades were united at Châlons on July 22, while the 3d remained at Paris. These brigades not having commenced their march upon Nancy until August 6, were ordered back to Châlons on the following day, in consequence of our reverses on the frontier. The division was thenceforth to remain separated from its corps.

On the 28th of July, this corps (6th), which had begun to receive its reserves, presented an effective of 29,820 men. On August 6, before entire completion, it was ordered to move to Nancy and draw near the main body of the army.

Its movement had commenced, when a second order, necessitated by the unfavorable news received from the frontier, obliged a retrograde march. Upon the receipt of further orders, these troops were again moved forward on the 9th, and the concentrations of the 3d, 4th, and 1st Divisions upon Metz, were effected August 10, 11, and 12 respectively. At the same time a regiment of the 2d Division arrived, accompanied by its division commander, General Bisson, who had pressed forward with his first troops. The other regiments, the *personnel* of the engineers, and the reserve artillery, were not able to pass Nancy. The railroad between this place and Metz had already been cut by the enemy's scouts.

The 6th Corps was obliged to content itself with an incomplete formation. It was to comprise only 39 battalions of infantry, one of them *chasseurs à pied*, 48 guns (*canon de* 4 and *de* 12), and 24 mitrailleuses. The services which it lacked were made up to it in part, after the battles of Rezonville and Gravelotte, by loans from the other army corps and the General Reserve. There was thus added to it, August 17, the 1st Division of Reserve Cavalry, completed a few days afterwards, and

reaching, August 23, an effective of 3,624 men and 3,211 horses.

The General Artillery Reserve gave it, from the 16th to the 19th, 4 batteries, which increased its effective 556 men, 24 guns, and 470 horses.

The *personnel* of the administrative and medical services, and of the trains and artillery parks, was organized and completed in the same manner.

Notwithstanding the obstacles in the path of its concentration, the 6th Corps presented on August 1 an effective of 1,474 officers, 33,946 men, and 5,534 horses.

7th Corps.—This corps, under order of General Felix Douay, was to be formed at Belfort and Colmar from the garrisons of the South-East. In addition, it was to receive troops from St. Denis, Civita Vecchia, Perpignan, La Rochelle, and Clermont-Ferrand. It was to encounter greater difficulties in its organization than the other corps. The character of its composition exposed it to the risk of being still unprepared when the German armies would be in condition to take the offensive; and in case of a reverse upon the Lauter, its isolated situation in Upper Alsace would oblige it either to follow the neighboring forces in retreat or to separate itself from them.

Three of the regiments of the 1st Division were at Colmar on July 24; the fourth did not arrive until August 4.

The 2d Division found itself in a similar situation at Belfort. It lacked on August 1, a battalion of chasseurs which had set out from Civita Vecchia, but which did not arrive at Altkirch until August 4.

The 3d Division was still further delayed. Having yet received but three of its regiments, it was ordered to temporarily replace at Lyons the divisions sent to the frontier, and did not arrive at Belfort until August 12

and 13. One of its regiments, then in Corsica, was not able to join it. One brigade of the Cavalry Division formed at Belfort on 25th July. The second brigade was retained at Lyons for fear of popular outbreaks there, and afterwards directed upon the 13th Corps at Versailles.

The 7th Corps was fettered even to a still greater degree in organizing its accessory services and its reserves. It was obliged, under the pressure of events, to abandon Upper Alsace, then the line of the Vosges, and to follow the fortunes of the 1st Corps before having finished its formation. On August 6, the day of Woerth, it had, as yet, in Alsace, but 22 battalions of infantry, two of them *chasseurs à pied*, 13 squadrons, 66 guns, (*canon de* 4 and *de* 12), 12 mitrailleuses, 3 companies of engineers, and a detachment of artificers.

Its effective, which, on July 28, did not exceed 8,400 men, reached by August 1, 1,043 officers, 23,142 men, and 5,396 horses.

General Reserves.—*The General Cavalry Reserve* was to comprise three divisions, each of 16 squadrons and 12 pieces (*canon de* 4). The first and second divisions received orders to form at Lunéville, and the third at Pont-à-Mousson.

The last two only were organized. The first, at Metz, composed of chasseur regiments from Africa was weakened by the absence of its 4th regiment, and still further disorganized by the loss of two additional regiments sent to Châlons. The second of these divisions, formed by August 2, left Lunéville on this date for Brumath, and on August 5 bivouacked at Reichshoffen. The third, organized about the 29th of July, proceeded to Faulquemont on August 5. The first left Lunéville on August 7, with three regiments, but did not reach Metz until the 10th.

By August 1, these three divisions presented an effective of 464 officers, 6,360 men, and 6,321 horses.

The General Artillery Reserve was to be composed of 16 batteries (eight of *canon de* 4 and eight of *canon de* 12.)

Its formation was completed at Nancy during the first days of August, and it reached Metz on the 8th and 9th.

On August 1, it counted an effective of 87 officers, 2,675 men, and 2,725 horses.

The General Engineer Reserve was organized in 4 companies about August 2, and on the 8th presented an effective of 13 officers, 459 men, and 196 horses.

Finally, the General Headquarters of the army, including the Emperor's military household, comprised, August 1, 207 officers, 1,560 men, and 1,610 horses.

It was in reality about 28th July, that the army began to increase its effectives. At this time, the Germans were prepared to repel an aggression with all the advantages of numerical superiority. In France, all the principal movements of concentration had terminated, but the mobilization continued. This was the consequence of a system which, in attempting these two operations simultaneously, succeeded only in entangling them.

The arrival of the reserves, the most distant troops, and the accessory services, continued to increase the effectives up to August 6, the date on which the formation of the Army of the Rhine was nearly completed.

It had, then, taken twenty-three days to concentrate the greater portion of our forces on the frontier. The delays had been caused by the blocking up of the railroads, and by the tardy organization of the accessory services. But on account of the character of events, and the rules in vogue governing official reports, it was not possible until August 1, to estimate with sufficient accuracy the results of the work, which had been dragging on with so much confusion and disorder since July 16.

We obtain the following general figures for August 1:

	OFFICERS.	MEN	HORSES.
With the Army of the Rhine	11,249	252,761	63,607
In the interior	8,924	231,629	45,258
In Algeria	2,249	40,945	12,529
At Rome	206	5,260	813
	22,628	530,595	122,207

TOTAL . . . . . 553,223 *rationnaires.*

The only completely organized troops remaining disposable in the interior were the 22d, 34th, 58th, and 72d regiments of the line, and the 8th regiment of *chasseurs à cheval.**

The War Ministry, on August 1, estimated the Army of the Rhine as 24,844 stronger than here indicated. This difference arose from the following causes:

1st. In the calculations made at Paris were included certain elements that had not yet been joined to this army. Their effective was 6,841 men.

2d. Detachments aggregating 38,678 men, had been directed upon the army from the depots in consequence of orders from the War Ministry, under dates of July 27, 28, 29, and 30. At the depots, all of these men were considered as having reached the army on August 1, while, in reality, 20,000 only had joined at this date. This was the number given in the corps reports. There thus resulted a difference of about 18,500 men, which number, added to the 6,841 mentioned in the preceding paragraph, gives a total of 25,347—but slightly different from 24,844, the figures already given.

On August 1, the forces of the Army of the Rhine were thus made up:

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* The troops of occupation in Rome comprised the 6th battalion of *chasseurs à pied*, the 35th and 42d of the line, 2 squadrons of the 7th *chasseurs à cheval*, and 3 batteries of artillery.

	BATTALIONS.	SQUADRONS.	BATTERIES.	OFFICERS.	TROOPS.	HORSES.
General Headquarters, and military household of the Emperor	. . .	. . .	. . .	207	1,560	1,610
Imperial Guard . .	24	30	12	1,047	21,028	7,304
1st Corps*	52	26	20	1,651	40,165	8,143
2d Corps	39	18	15	1,172	27,956	5,016
3d Corps	52	31	20	1,704	41,574	9,810
4th Corps	39	18	15	1,208	27,702	5,536
5th Corps	39	18	15	1,174	26,243	5,527
6th Corps †	49	19	20	1,474	33,946	5,534
7th Corps ‡	31	22	15	1,043	23,142	5,396
1st Division of Reserve Cavalry ‖ .	. . .	9	2	114	1,736	1,735
2d Division of Reserve Cavalry.	. . .	16	2	178	2,520	2,435
3d Division of Reserve Cavalry ⁒ .	. . .	16	. . .	172	2,104	2,151
General Artillery Reserve	. . .	. .	16	87	2,675	2,725
General Engineer Reserve	. . .	. . .	. . .	8	228	58
Grand Field Park .	. . .	. . .	. . .	29	652	38
Grand Engineer Park. ¶						
	325	223	152	11,268	253,231	63,018
				264,499 men.		

*The 10th dragoons had yet not arrived.

†The 6th Corps was not on the frontier August 1.
The 6th *chasseurs à cheval* (5 squadrons) and 2 squadrons of the 2d lancers had not yet rejoined.

‡9 battalions, 9 squadrons, and 2 batteries comprised in the above figures were still at Lyons on August 1.

‖The 4th *Chasseurs d'Afrique* and 3 squadrons of the 3d *Chasseurs d'Afrique*, had not yet rejoined.

⁒This division had not received its artillery by August 1.

¶ Was not organized on August 1.

These figures comprehend all the elements *entering into the composition of the Army of the Rhine*, and which were assembled, fully equipped, on August 1, either upon the frontier or at other points (Paris, Châlons, Lyons, etc.). After deducting the latter, that is to say, all the 6th Corps and a part of the 7th (9 battalions, 9 squadrons, 2 batteries), we have for the total force assembled upon the frontier on August 1, the following figures:

267 battalions
195 squadrons
152 batteries
} representing an effective of { 222,242 men.
56,094 horses.

On August 6, the preceding tabular totals became: 329 battalions, 230 squadrons, and 152 batteries, representing 275,101 men and 65,439 horses. From the 1st to the 6th of August, the effective was raised 10,702 men and 2,421 horses, notwithstanding the losses experienced in the first combats. At this time the invasion began. Its first effect was to disorganize three army corps (1st, 5th, and 7th), and to retard, if not to prevent, further mobilization.

France expiated thus cruelly the defects of her organization, and learned too late, under the lash of terrible misfortunes, that her entire military system needed revision. But thenceforth regrets were futile, and nothing remained but to defend the national hearth by employing to the best advantage the resources brought together with so much difficulty.

§ 3. CONCENTRATION.

I.—Concentrations of Armies.

1st. SELECTION OF THE ZONE OF CONCENTRATION.

After an army has been mobilized, it is necessary to concentrate its various forces.

The zone and points of concentration are determined by the *geographical character of the frontiers.* But considerations of a different nature press into view to supplement this principle, and to modify its application.

It is imperative, at the very outset, to consider the projets of the enemy, taking into account the effectives at his disposal, the duration of his mobilization and concentration, and finally the strategic importance of his first movements.

This work completed, it is necessary to think of covering the threatened provinces. This is one of the essential conditions of a good concentration, and it is independent of the protection of the frontier by the screen of troops found there at the moment war is declared.

There are, then, two operations: to protect the frontiers against the attempts of the adversary, and to cover the concentration.

For the first, the selection of a good zone of concentration will often suffice.

It is certain, indeed, that if the assemblements of a grand army take place upon the flank of the probable direction of the enemy's columns, the latter will be forced to abandon his projects.

In this connection the campaign of 1809 presents an array of favorable dispositions worthy of citation.

CONCENTRATION OF THE FRENCH ARMY IN 1809.

Learning, in March, of the preparations for war made by the Austrians, Napoleon calculated that they would be able to take the initiative of the movements before the 10th of April. His army was at various points in Germany. It was necessary to make a concentration looking toward the enemy's probable offensive.

He chose for this a position covered by lines of defense, from which he could threaten his adversaries'

communications. To this end he wrote to Berthier. (*See Plate XX.*)

PARIS, March 28, 1809.

* * * * * *

"If the Austrians attack before April 10, the army should concentrate behind the Lech, the right occupying Augsburg, the left, the right bank of the Danube from Ingolstadt to Donauwerth.

"Donauwerth ought to be the most central point of the line. * * * *"

Napoleon adopted thus an angular base of concentration, the choice of which sufficed to render the Austrians circumspect in their advance.

The dispositions designed to complete this measure were developed in the instructions which he two days later, when about to set out for the army, addressed to Berthier:

"The Austrians have not declared war. Everything, however, indicates that toward the 15th of April, their army will be ready to take the field. It is then expedient that we also be ready by that date, and with exception of the direction to be taken, we shall be so. * * Thus, then, from the 1st to the 15th of April, I shall have three army corps, which should be assembled upon the Danube either at Ratisbon, Ingolstadt, or Donauwerth. * * *

"It is necessary then:

"1st. That Augsburg be protected against surprise, and that, instead of relaxing the work on the fortifications, their restoration be pressed with redoubled activity.

"2d. That all bridge-heads upon the Lech should be palisaded and armed with stronger artillery than that used in field service.

"Work should be so carried on at Ingolstadt as to provide good bridge-heads upon the Danube, for the purpose of allowing a debouch, at will, upon the left bank.

"The headquarter station at Donauwerth, and the line of the Lech, are to constitute our position in case the enemy anticipates my dispositions; but if he does not stir, I desire that General Oudinot and General St. Hilaire unite at Ratisbon. This city is five ordinary or four forced marches from Augsburg. By starting General Oudinot from the latter place on April 5, he would be at Ratisbon on the 10th; and supposing General St. Hilaire at Nuremberg on the 5th of April, he would arrive at Ratisbon on the 8th or 9th, where, about 10th April, I would have 30,000 infantry and 7 regiments of cavalry.

"The Duke of Istria would reach the place on the same day, and assemble his entire cavalry reserve.

"The Duke of Auerstädt would move his headquarters to Nuremberg. He would occupy Baireuth and the *débouchés* upon Egra with his extreme left only. His headquarters would thus be but twenty-four leagues from Ratisbon, that is to say, three marches.

"The three divisions of the Bavarian army would also be assembled around Ratisbon, at distances of one or two days' march, or three at the farthest.

"The Duke of Rivoli would move his headquarters to Augsburg, thus holding himself within four or five marches of Ratisbon.

"Thus the general headquarters would be located at Ratisbon, in the midst of 200,000 men astride the Danube, guarding its right bank from Ratisbon to Passau; and we would then be released from all apprehensions on account of the enemy's movements, while the Danube would give us easy means of supply.

"With our army cantoned around Ratisbon, what will the enemy do? Will he move upon Cham? We shall be ready to unite all our forces against him to stop him upon the Regen in previously selected positions.

"Does he move upon Nuremberg? He will find himself cut off from Bohemia.

"Will he advance upon Bamberg? He will likewise be cut off.

"Again, will he march upon Dresden? Then we enter Bohemia, and pursue him even into Germany.

"Will he act in Tyrol simultaneously with his advance from Bohemia? He could undoubtedly reach Innspruck, but the ten or twelve regiments placed there could not take part in the struggles upon the *débouchés* of Bohemia; and these troops at Innspruck would learn of the defeat of the army in Bohemia by our arrival at Salzburg.

"Finally, if the enemy should appear inclined to attack us upon both the extreme right and left, we must accept the centre, having the Lech upon which to retreat, and holding a garrison at Augsburg, in order to be sure of always commanding this place.

"Thus then the engineer service will confine itself to fortifying the bridge-heads upon the Lech, and also the cities of Passau, Augsburg, and Ingolstadt."

These instructions were not well understood. Berthier, thinking to conform to them, directed the corps of Oudinot and of Davout upon Ratisbon, to the north-east of Ingolstadt. He thus prolonged the army's positions upon the Danube, and exposed them to separation by an active and resolute enemy.*

Napoleon immediately wrote him:

"My cousin, I am in receipt of your letter, in which you inform me that you have directed Oudinot's corps upon Ratisbon. You do not let me know what necessitates such an extraordinary measure, which scatters and weakens my forces.

"I do not, indeed, understand the spirit of your letter of the evening of the 13th, and I would have preferred to know that my army was concentrated between Ingol-

*General Pierron.

stadt and Augsburg, the Bavarians in the first line, as the Duke of Dantzic had placed them, until it is made clear what the enemy intends to do. I am anxious for news from the Duke of Auerstädt. My instruction must be complied with, which is to rally my army and to have it in hand. If the enemy were to debouch by Tyrol, and we should be obliged to give battle at Augsburg without General Oudinot, this would be a great misfortune. If, on the other hand, we were forced to abandon Augsburg, which is not in a state of defense, and to surrender our magazines at Ulm, this would also be a great misfortune. The situation would be perfect if the Duke of Auerstädt had been stationed near Ingolstadt; the Duke of Rivoli with the Würtembergers, and the corps of Oudinot near Augsburg. Since the enemy has taken the offensive, we must find out his plan. The principal thing is that Oudinot be at Augsburg before the enemy, and that he keep his eyes well open. As regards the Duke of Auerstädt, and the St. Hilaire, Nansouty, and Montbrun divisions, the instructions for them are the same as for all—to concentrate between Ratisbon, Ingolstadt, and Augsburg; so that it will be necessary to do just the contrary of what you have already done. It is possible that I shall leave here to-day, so as to reach Dillingen this evening. Write me by this route."

Napoléon hastened to Donauwerth at once, in order to repair the mistake committed, before the arrival of the Austrians. Here he learned that the Archduke Charles, who had crossed the Inn on the 10th of April, was marching upon Ratisbon to effect a junction there with Bellegarde, coming from Bohemia. He immediately ordered Masséna to march from Augsburg upon Landshut, to cut the enemy's communications there; Davout to move from Ratisbon upon Ingolstadt, informing him that he would undoubtedly have an opportunity

of attacking the flanks of the Austrian columns arriving from Landshut, while the Bavarians, posted at Abensberg, would assail them in front.

This combination succeeded, and the Archduke lost his communications with Vienna by the right bank. It is to be observed that if he had taken another direction, and had moved upon the Lech, his communications would not have been the less compromised, on account of the angular form adopted by Napoleon for his zone of concentration.*

In reality, Napoleon had not alone to prepare an offensive campaign against Austria. He was obliged also to protect Bavaria, his ally, against an Austrian invasion. This was assured by the positions taken in the movements of concentration, and by the presence of our corps upon the frontier.

In 1870, the selection of the Palatinate by Marshal Von Moltke, for the concentration of the German forces, produced similar results. The States of the South were protected against a French invasion by the fact alone that the position of the German forces threatened from the left the communications of troops directed toward this side.

2ND. PROTECTION OF CONCENTRATIONS.

The assemblement of the different parts of an army cannot, without danger, be effected under the eyes of the enemy and exposed to his blows. The army is then obliged to conceal its movements behind a protecting screen formed by troops, obstacles of the ground, or a combination of both.

For the discovery of the principles controlling these combinations, let us again resort to the lessons of history.

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* General Pierron.

CONCENTRATION OF THE RUSSIAN ARMY IN 1807.

In this year Napoleon had cantoned his army between the Narew and the Vistula, calculating that the Russians, in retreat upon the Niemen, would not resume hostilities before the commencement of good weather. He was soon undeceived.

Benningsen, appreciating the advantages to be drawn from the network of woods, lakes, and marshes, that covered the country between the Alle and the Narew, had concentrated his forces to the east of the extensive forest of Johannisberg.

While he was effecting his assemblements behind this screen, three divisions were assigned to the duty of protecting them. One of these, in position at Goniatz, watched the *débouchés* of the lake region. The other two, established at Ostrolenko and at Bransk, held those of the forest. The Russians thus succeeded in concealing their operation from our outposts, and on January 23, profiting by the woods, which served as a mask, they attacked our cantonments upon the Passarge.

Fortunately the resistance of Ney's corps, which received the enemy's first shock, gave Napoleon time to make his dispositions. These were so skillful that their discovery, through the capture of a bearer of dispatches, decided Benningsen to renounce his projects and retire upon Eylau.*

Benningsen's concentration was effected then under cover of a large forest, in a region difficult of access, and with the protection of three grand tactical units, composed of troops of all arms, guarding the points of issue.

Under similar circumstances, Napoleon frequently employed the same means.

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*General Pierron.

CONCENTRATION OF THE FRENCH ARMY IN 1815.

In March, 1815, the Emperor wished to conceal the concentration of his army from the Allies. The cantonments of the English extended from the Scheldt in the vicinity of Oudenarde to the high-road from Brussels to Charleroi. Those of the Prussians covered Namur and Sombref, near the confluence of the Sambre and the Meuse. (*See Plate XXI.*)

In the space comprised between these two rivers, to the south of Marchiennes, the forest of Beaumont formed a vast curtain, which hid from the Allies the country between Sobre, Beaumont, and Philippeville. It was there that Napoleon resolved to assemble his forces.

But the enemy was near; he must be deceived as to the real points of concentration. The garrisons of Lille, Dunkirk, and the neighboring places, received orders to advance upon the English outposts and push them vigorously, to give the impression that we were to take the offensive by this side.

At the same time the most rigorous measures were ordered, to prevent all communication upon the frontier. Even camp fires were forbidden.

These measures succeeded, and on the evening of June 14, the French army, entirely assembled, occupied the following positions: The 1st and 2d Corps, forming the left wing, were at Sobre, upon the Sambre, and at Ham-sur-Heure; the 3d and 6th Corps and the Guard, composing the centre, were around Beaumont; and the right wing, which consisted of the 4th Corps, was at Philippeville.

On the morning of the 15th, Napoleon debouched in three columns, crossed the Sambre, and on the next day, at Ligny, gave battle to the Prussians, who, on account of the measures adopted, had not been able to discover his preparations for attack.

Some of these measures are indicated in the order of

June 13, 1815, which pointed out to the army the positions to be occupied on the 14th:

"The cavalry of the Imperial Guard will be stationed behind Beaumont; and its most distant parts should be within a league of that place.

"The 2d Corps will take position at Leers, that is to say, as near as possible to the frontier without crossing it. The four divisions of this corps will be united, and will be bivouacked in two or four lines: the headquarters in the centre, the cavalry in advance, exploring all the *débouchés*, but not passing the frontier, yet making it respected by any of the enemy's partisans who may attempt to violate it.

"The bivouacs will be so placed that the fires may not be seen by the enemy. The generals will see that no one leaves camp.

"The 1st Corps will take position at Sobre-sur-Sambre and will bivouac in several lines; making certain that like the 2d Corps its camp-fires are not seen by the enemy, and that no person leaves camp. The generals will assure themselves that their munitions, supplies, etc., are in proper condition.

"The 3d Corps will to-morrow take position a league in advance of Beaumont, as near as possible to the frontier, but not crossing it, nor permitting it to be crossed by any portion of the enemy. General Vandamme will keep every one at his post, and order the fires to be concealed, so that they may not be seen by the enemy.

"The 6th Corps will move beyond Beaumont, and bivouac in two lines, at a quarter of a league from the 3d Corps.

"Marshal Grouchy will send the 1st, 2d, 3d, and 4th Cavalry Corps in advance of Beaumont, and bivouac them between that place and Walcourt, also making the frontier respected, and seeing that no one belonging to his own forces crosses it or allows himself to be seen, and that fires are concealed from the enemy."

The results of this operation were afterwards estimated by Napoleon himself in the following terms:

"Marshal Blücher and the Duke of Wellington were surprised; they saw nothing, knew nothing of all the movements which were taking place near their outposts.

"VI. *Sixth Comment.*—The French army manœuvred upon the right bank of the Sambre on the 13th and 14th. It camped, on the night of the 14th, within half a league of the Prussian outposts, and yet Marshal Blücher had no knowledge of its presence. And when, on the morning of the 15th, he learned at his headquarters at Namur that the Emperor was entering Charleroi, the Prusso-Saxon army was still in cantonment over a stretch of country thirty leagues in extent. Two days were necessary to bring its parts together.

"VII. *Seventh Comment.*—The Duke of Wellington was surprised in his cantonments. Beginning with 15th May, he should have concentrated around Brussels, and within eight leagues of this city, holding his outposts upon the *débouchés* of Flanders. The French army had been manœuvring within reach of his outposts for three days; it had been engaged in hostilities for twenty-four hours; its headquarters had been established at Charleroi for twelve hours—and yet the English general at Brussels was ignorant of all these events, and his cantonments were still spread over twenty leagues of ground, in fancied security."

In this campaign, the concentration was protected by a natural screen, the forest of Beaumont; by a line of defense, the Sambre; by an extremely rigorous covering service; and finally by a manœuvre which rarely fails of success—a demonstration of attack in a direction widely different from the line along which the real movement is to be made.

CONCENTRATIONS OF THE 1ST ARMY OF THE LOIRE AND THE ARMY OF THE NORTH IN 1870.

The Government of National Defense, having resolved to continue the war, was desirous of taking the offensive with the 1st Army of the Loire, just formed. The first step was to bring its forces together.

The enemy was at Orleans.

A zone of concentration was then chosen which threatened his line of retreat, and furnished a natural obstacle extensive enough to conceal the intended movements. The forest of Marchenoir, covering on the east the ground between Vendôme and Blois, fulfilled these conditions.

The army concentrated there at the end of October, sheltered by this forest. It guarded the *débouchés* from Moré to Lorges by battalions of *gardes mobiles* not yet assigned to regiments.

General Von der Tann, in order to acquaint himself with the scope of these movements, of which he had been apprised, made an armed reconnaissance at Vallières, in which his troops were repulsed. On the 8th of November, this new army appeared upon the eastern borders of the forest curtain, and on the following day at Coulmiers successfully attacked the I. Bavarian Corps, which had little idea of its strength or organization.

During the same period the Army of the North was able to form, under protection of the strongholds in the departments of the North and of Pas-de-Calais, organize at once into three divisions, concentrate unknown to the enemy, debouch into the valley of the Somme, and, although incomplete, match itself against the I. Prussian Army at Pont-Noyelles.

3D.—SCOPE OF CONCENTRATIONS AT THE PRESENT TIME.

In our day, at the commencement of a war, the concentrations of armies have no longer the same character as formerly.

Their scope is enlarging, and between two powers of the first order, these operations will henceforth offer, according to a German expression, the spectacle of a veritable displacement of peoples. Each nation, with feverish activity, throws upon its frontiers more than a million of men, two or three hundred thousand horses, and immense war material. One might almost say the entire populations of the two states are poured forth upon a narrow space there to fall upon each other.

Without the commercial and industrial relations existing in our day, without the means of communication and of correspondence operating in time of peace, the transportation and supply of such masses would be impossible. In this regard France and Germany are most amply furnished. They stand alone, perhaps, in possessing railroad material in sufficient abundance to transport the entire field army.*

The importance of concentrations has then considerably increased since the rapid growth of the combatant masses. And, consequently, it has become necessary to bring to their preparation and execution the most skillful methods that can be devised.

This operation will henceforth be of such grave importance that, according to the views of the German staff, "*mistakes made at the outset, in the assemblement of the armies, cannot be repaired during the entire course of the campaign.*"

It is not impossible, surely, for a victory to turn to the right path a campaign badly begun ; but in the light of experience, such a result is at least improbable.

The first consequence of a defective concentration is felt upon the discovery that the forces are not at the points where they may be employed to the best advantage. In such a case, the army is powerless to deliver the battles which alone could repair its past mistakes.

* Von der Goltz.

The campaign of 1805 offers us proof of this fact. The principal Austrian army, 100,000 strong, with the best regiments and the most skillful general, the Archduke Charles, was ordered into Italy, where, from appearances, were to take place the decisive events of the war, as in 1796, 1797, 1799, and 1800. In Germany, on the contrary, there were brought together only 70,000 men, under orders of the Archduke Ferdinand and General Mack. Soon Napoleon appeared upon the Danube with superior forces, hastening from Boulogne by forced marches. The catastrophe at Ulm was the result, and the victory gained by the Austrians in Italy at Caldiero in no way compensated for it.

The mistake being at once seen, the Archduke was recalled to Germany. But it was too late. This could not alter the issue of the campaign, and the battle of Austerlitz put a term to it before the Archduke could reach the scene of active operations.

A defective distribution of the forces is not the only unwelcome consequence of a badly devised concentration.

Ordinarily, a great power concentrates its armies with a view to take the offensive. Now, mistakes in the calculation of this operation will usually have the effect of reducing it to the defensive. In this case, its concentration, suitable for the offensive, may become disastrous when it finds itself suddenly cast upon the defensive.

The assemblement of our army in 1870, is proof of this. The first project of concentration provided for the formation of two separate groups, one at Metz, the other in Alsace. This project rested upon the hope of a prompt offensive, and further, upon political considerations; and it commended itself by the fact that it offered increased facilities for supplying the masses thus assembled.

Unfortunately we had not the means of being beforehand with the offensive. The suppositions made upon

this subject proved erroneous. The alliances upon which we counted were illusive. These circumstances snatched from the commander-in-chief the opportunity of adopting timely and energetic measures. Finally the facilities for provisioning the army, represented in the eyes of the administration by the railroads centering at Metz and Strasburg, were found from the beginning to be entirely annulled by the transport of troops and material of war. And as the rule then was to draw everything from the central magazines, it soon became impossible to receive even the most necessary provisions.

The loss of the first combats was the bitter fruit of this unhappy concentration.

Moreover, distance and obstacles of the ground would not permit our two principal masses to effect a concentric retreat after these reverses. Their junction, which had become indispensable, was to be effected upon exterior lines, long and dangerous, and the movements to this end began by a retreat upon Châlons. The protraction of this retreat, and the isolation of the groups, gave the Germans the means of closing upon the more important one at Metz, and shutting it up there. The desire to rejoin the latter at this place, and to repair the faults incident to the commencement of the campaign, led to the march upon Sedan and the catastrophe of the 1st of September. This chain of reverses, or fatalities, as some are pleased to term them, was, as has already been said, only the logical consequence of the faulty dispositions adopted for the concentration of our forces.

II.—Transports.

1st. Plan of Concentration and Transportation.

The concentration of armies is intimately connected with their mobilization. The end of the one marks the beginning of the other. It has, likewise, a close asso-

ciation with the *projet* of operations. The latter determines its zone as well as the number of effectives to be assembled.

Concentration comprises two periods:

The transport of troops,

And their strategic deployment.

It is effected according to a methodical plan prepared in advance by the commander-in-chief and the chief-of-staff.

The plan of transportation is regulated by this first general plan; and in all countries it is a secret undertaking, of which the general-staffs and the railroad companies have entire control. Rapidity of concentration depends in great part upon the care with which this plan is drawn up. It is, then, strongly influenced by the execution of the transports.

2ND. DURATION OF CONCENTRATIONS.

The concentration is of such importance that the loss of a single hour should not be looked upon as a matter of trifling consideration. The greatest possible number of railroads should, therefore, be called into requisition.

The influence of these roads upon the movements of armies now becomes all-controlling. It is understood that if each army corps had an independent double track at its disposal for the transportation of its various elements to the frontier, if it were stationed upon this line, and so mobilized as to insure uninterrupted use of its means of transport, the concentration would be effected under the most favorable circumstances. This would, indeed, be perfection. Finally, if at the terminal stations the sidings were sufficiently numerous to allow the trains to succeed one another every fifteen minutes, ninety-six trains could be unloaded in twenty-four hours. It would thus be possible to secure the arrival of the one hundred and five trains of an army corps in twenty-six and a quarter hours.

It is evident, however, that in practice such a result can never be reached.

We must then be content with knowing and applying, within possible limits, the principles which insure order and rapidity in this operation. These principles are as follow:

First of all, provision should be made for the wants of the troops during the period of transportation. On account of the positive rule which prescribes that the troops shall be transported first,—the different arms of the service being apportioned according to the exigencies of the situation,—and that the provision trains shall be held back until the last, it must be calculated that the units disembarking during the first days will not receive their supplies of provisions in less than a week. As to the local resources, it is estimated that the richest sections can furnish these troops subsistence for no longer a period than two days. Abundant supplies must, therefore, be collected near the zones of concentration, either before the actual declaration of war or during the period of mobilization.

To return to the transports, it is essential that all railroads be utilized without loss of time, and without leaving a single means of transport unemployed.

This last condition depends upon the mobilization. In this view all the various units should be promptly made ready, and sent in season to the embarking stations. The maximum yield of the railroads does not, indeed, depend upon the speed of the trains, but upon their frequency. And to obtain such returns in the general movement, it is clear that the ordinary roads of the country must be combined with the railroads, and all the work be prepared in advance with mathematical precision.

This work is, in a general way, controlled by the following rules:

For the transports, single-track railroads are, of course, inferior to double-track lines. The capacity of the former was estimated in Germany, in 1866, at twelve trains per day, and of the latter, at eighteen trains.

To allow for mischances, however, a reduction in these figures was advised.

It was calculated that the transportation of an army corps with all its accessories would require eleven days by a single, or seven by a double-track line. Now this body would be able to make on foot about 50 leagues in 11 days and 33 in 7 days, at a daily rate of 22 kilometres [13 miles], with two days of rest in the first case and one in the second.

It is then certain that railroads should be employed as a means of transportation for troops only for long distances.

Under these conditions, in computing the returns, counting eight and twelve trains for single and double-track roads respectively, the Germans estimated that they could dispatch—

Upon a single-track railroad:

A division of infantry complete in 66 hours;

A division of cavalry in 63 hours;

An army corps without trains in seven days;

An army corps complete in eleven days.

Upon a double-track line:

A division of infantry in 44 hours;

A division of cavalry in 42 hours;

An army corps without trains in four and two-thirds days;

An army corps complete in seven and a half days.

With a mean speed of 26 kilometres [16 miles] an hour, our neighbors calculate that a body of troops can be transported 157 kilometres [97½ miles] in six hours, 315 [196 miles] in twelve hours, and 630 [391 miles] in twenty-four hours.

Consequently, in order to move an army corps 900 kilometres [560 miles], two months would be required by ordinary roads, thirteen days upon a single-track, and nine days upon a double-track line of railroad.

But for a distance of 112 kilometres [70 miles] it would require:

Upon a single-track line, eleven days;

Upon a double-track line, eight days;

By ordinary roads, five days.*

There is thus a minimum distance below which the employment of railroads would be disadvantageous. It is a limit that may always be easily determined by the circumstances of a given case.

We may then sum up thus the various works to be executed and the rules to be followed in preparing and operating the transports:

1st. *The establishment during peace of tables of march corresponding to the different hypotheses of concentration;*

2d. *Dispatch of the units as soon as their mobilization is finished;*

3d. *Transport of the combatants before the matériel;*

4th. *Complete utilization of all means of communication;*

5th. *Distribution of the disembarking stations at intervals upon the lines of concentration, the most distant points not being farther than a day's march apart.*

III.—Strategic Deployment.

The troops having reached the railroad termini and disembarked, it is essential to consider their further disposition. To leave them at the landing-places is impossible. They must be established to the front in such a way as to be able to support each other in case of need.

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*Blume, *Strategy*. (These figures are below the time actually required.)

Hence the necessity of making several marches, generally short, after disembarking, the effect of which will be to place each division upon the points it is to provisionally occupy. These movements, however limited, constitute what is called to-day *the strategic deployment.*

With the transport, this completes the concentration of the forces upon a frontier zone, and is equally subject to rules which we may very properly consider.

The strategic deployment is designed to put the army in condition for immediate service.

If the offensive has been decided upon, the cantonments should be so chosen that the army may be able to undertake the first marches as soon as possible, sometimes even before the transport is completed. Their localities will be dictated by the roads upon which the corps must advance toward the enemy's frontier.

The certainty of being able to take the initiative of the movements will, moreover, give the power of extending the deployment. The contrary would be the case if an offensive movement on the part of the enemy was feared.

Once the strategic deployment is ended, each army will occupy a certain number of frontier points constituting its front. The direction of this front with reference to the enemy's lines of operations, is not a matter of indifference; it should vary according to circumstances. In principle, as we have already seen, it is so ordered as to be prepared for all contingencies, while, if possible, threatening the adversary's line of communications.

In every case, the first condition of success for a strategic deployment, as well as for a concentration, is security.

Hence arises the necessity for double precaution:

In the first instance, to protect the frontier against the enemy's incursions during the period of mobilization;

Then, to cover the concentration.

Now, at the moment war is declared, the protection of the territory devolves entirely upon the garrisons nearest the enemy. But immediately afterwards, or at the same time, if possible, a defensive screen should be organized, capable, by its strength and the extent of its front, of allowing the various bodies to assemble and to support each other in case of attack.

Hence arises the obligation of sending to the front strong masses of cavalry reinforced by artillery, and supported in rear, if circumstances require it, by a large infantry unit.

The duty at this time resting upon the cavalry is at the present day usually performed by the independent divisions of this arm. It is one of the features of their reconnaissance service.

To cover the concentration of the army is, however, only a part of the service they are called upon to render at this critical time. They must, in addition, seek to retard the union of the enemy's forces.

Such a result ought to assure great advantages to whichever belligerent succeeds in obtaining it.

It may, indeed, be asked what would be the consequences of a raid boldly carried out, on the day following the declaration of war, by eight or ten brigades of cavalry, each accompanied by a battery. Throwing themselves unexpectedly upon the enemy's territory, they would hasten to burn his magazines and destroy his railroads, detraining stations, and other important works, spreading terror among the inhabitants for sixty leagues from the frontier, and at one blow arresting mobilization and concentration.

A glance is sufficient to reveal the consternation which such an event would kindle on the one side, the confidence, ardor, hope of victory it would awaken on the other.

France must expect enterprises of this kind in a future war with her neighbors.

The means for undertaking them are all prepared, and there is but one way of replying—to be in our turn prepared to act in the same way.

"In every instance," says Von der Goltz, "the parts of an army charged with protecting the frontiers during the concentration, should be diverted from the main operations only while engaged in the performance of this duty. It is essential that the troops be so disposed that all of them may be available and easily united when the necessity arises for striking heavy blows."

In 1866, Field-Marshal Benedek departed from this rule, and thus at the outset, the fractions of his army were beaten separately before the hour for decisive engagements.

As a result of our study, we may conclude that the rapidity with which armies will be able henceforth to assemble, will depend upon their more or less perfect system of mobilization, and the number of independent railroads that their government may have at its disposal.

These conditions can not be created by the genius of a general-in-chief, but rather by the prudence of governments, and by the sacrifices that a people is willing to make.

Those peoples who recognize the importance of these advantages, will be ever ready to submit to all the expenses which these military operations entail. Those who, not understanding it, or distracted by pre-occupations of another kind, neglect them during peace, may be certain, beforehand, of condemning their armies to the defensive, and their country to invasion.

Whatever may be the difficulties presented by a concentration, this truth must be understood, that the strategic deployment of an army is the only act of war that depends completely upon the will of the supreme directing power.

The combinations connected with it, however com-

plicated they may be, are under the control of no outside circumstances. Here it is only necessary to will, in order to succeed. The responsibility which in this connection falls to the commanders-in-chief and to their staffs, is consequently exercised to its fullest extent.

It is later only that the sovereign forces of chance come into play to put a hand upon the course of events.

Without further extending these considerations, we see that there exist certain general principles for strategic deployments as well as for transports, which, though not absolute in their character, greatly facilitate the concentration of armies.

They may thus be stated:

1st. Before the concentration, *assemblement near the disembarking stations, of provisions sufficient to supply the army*, at least during the entire period of transportation;

2d. *Protection of the frontier*, from the day war is declared, by the first disposable troops;

3d. *Dispatch to the frontier of the first mobilized units, for the purpose of covering the strategic deployment;*

4th. *Distribution of the corps and divisions upon the zone of concentration*, in order more or less close (generally *en échelon*), according to the probable character of the first combats;

5th. *Concentration of the armies upon angular fronts*, when the circumstances are favorable for such a direction.

Contemporaneous military history offers us various examples of concentrations.

That of Prussia, in 1866, is one of the most fertile in instruction. Upon its completion, it appeared entirely natural; but if one recurs to the circumstances which characterized its beginning, he is struck with the difficulties lying in its way.

IV.—Concentration of Modern Armies.

1st.—Concentration of the Prussian Armies in 1866.

In this year Prussia had nine army corps, including the Guard, distributed thus:

I.	Corps	Kœnigsberg.
II.	"	Stettin.
III.	" and the Guard . .	Berlin.
IV.	"	Magdeburg.
V.	"	Posen.
VI.	"	Breslau.
VII.	"	Münster.
VIII.	"	Coblentz.

The first preparations for war commenced secretly during the latter part of March.

The Prussian mobilization, ordered on May 3, was ended by the 23d. It had thus required a mean of from twenty to twenty-one days to completely mobilize an army corps.

As to transports and strategic deployments, they were not executed rigorously, in accordance with the prevailing rules on the subject.

Difficulties of the Situation.—Prussia was in a delicate situation. She was obliged to make head against three groups of enemies. To the South, Austria and Saxony could unite 264,000 combatants. They controlled a territory which projected a salient against the centre of the Prussian monarchy. From the summit of this salient, the expanded valley of the Elbe stretched away to within a few marches of Berlin.

On each side of this summit, a mountain chain, difficult of access, inclined toward the south, making any line of communications precarious.

To the South-west, the South German States had a force of 100,000 combatants at command, which would perhaps be joined to the first group. The frontier separating these States from Prussia, was co-incident with the course of the Main. To the West, Hanover and Hesse contained about 40,000 troops. This fact was not of much importance; but their territory extended to the Elbe, and if these forces were neglected, Prussian communications with the Rhine, as well as with the Duchies of the Elbe, might perhaps be cut.

Prussia had then before her three groups of enemies, three groups of forces, and three frontiers. Moreover, grave political considerations obliged her to treat with circumspection the populations she thought of annexing, and this necessity weighed heavily upon her deliberations.

The positions of her enemies made it difficult to keep up the close intercourse with her ally, Italy, that the necessities of the case demanded.

Prussia's concentration was to be effected in the midst of these divers embarrassments.

It was fair to suppose that Austria would be able to mobilize 240,000 combatants, and that the majority of these would be sent against her northern enemies, the Prussians. It was probable, moreover, that the decisive events of the struggle would occur on this side.

On May 12, it was learned at Berlin that Austria was concentrating three of her ten army corps in Italy; that her transports had begun on the 11th; that her cavalry was *en route* toward the Moravian frontier; and that with due activity she counted upon having considerable forces assembled on the borders of Saxony and Silesia by the end of the month.

From nine to twelve days were then required by Prussia to transport a corps with its accessories. The period varied according to the character of the road. What-

ever the distance, it was understood that the railroads used would not be entirely closed to commerce, and that only a small number of trains would be available for the service of the commissary and quartermaster departments.

It was already known that the movements of all the corps would not be completed before the first week of June, and that to reach even this result not an hour was to be lost. All railroad lines were to be used in the transport, and none was to move more than one corps. To transport more than this number upon a single line would be to increase the concentration period by from nine to twelve days.

On the 8th of April, 1866, a treaty of offensive alliance—for a while kept secret—had been concluded with Italy against Austria. Nevertheless, negotiations with a view to an arrangement continued with the latter power, with the lesser German States, with the Germanic Confederation, and other European powers. These negotiations were of a character difficult to understand until later. An incident will suffice to illustrate.

On April 20, the Austrian Government learned that 50,000 troops of the Neapolitan provinces had already concentrated between Modena, Bologna, and Ferrara; that there was an Italian force of more than 200 battalions in Lombardy and Tuscany; that the transportation of merchandise by rail had been entirely suspended in Italy since April 15, and replaced by military convoys. On 22d April it addressed a communication upon this subject to the cabinet at Berlin.

Count Bismarck deferred replying until the 30th, when he said: "There are no armaments in Italy of a menacing character, and those which have taken place *justify our conviction* that an unprovoked aggression against the Austrian Empire is far from the intentions of the cabinet of Florence. * * *

"Count Bismarck hopes that, upon receiving more precise information, the Imperial government will arrive at the conviction that the reports which have reached it concerning the aggressive intentions of Italy are entirely without foundation, and that, consequently, it will return to a permanent peace footing."

Now at this very moment war had been resolved upon. Prussia believed the situation so tense as to warrant mobilization, but too uncertain to permit fixing the date and place of her concentrations.

In the first part of May, the group of enemies of the West had indeed made its attitude plain; but Prussia was doubtful if it dare take part in actual hostilities. As to the South German States, "they were enemies yet to be born." The Austro-Saxon group alone presented an organized army, strong, and soon to be in condition to fight.

In anticipation of events, the Prussian government then, May 3, ordered a first assemblement of five army corps.

The V. and VI. Corps were to concentrate at Neisse and Schweidnitz, in Silesia; the III. and IV. in Lower Lusatia, between Torgau and Kottbus; the VIII. at Coblentz. (*See Plate XXII.*)

This movement of troops was, in a certain sense, a precautionary measure. It did not yet correspond to future operations. It was completed by the assemblement of the Guard at Berlin, and the two divisions of the VII. Corps at Minden and Münster.

In reality, Prussia began by a sort of half-concentration, contrary to her principles and to the customary rules prescribing that large tactical units shall not be concentrated before the time of their transportation to the frontier. But she took existing circumstances for her pilot; and not knowing at the time whether the peoples whose annexation she contemplated would be

friends or enemies, she resolved to treat them as enemies. This was logical and practical.

At the end of May, it was clearly seen at Berlin that a decisive solution of the questions raised could be found only in the Austrian front. In consequence, it was decided first of all to assemble on this side the seven corps in the East, and then the two corps cantoned in the Western provinces. A body of troops composed of the garrison regiments and the forces from the Duchies was formed, and with these it was resolved to crush Hanover and Hesse with unsparing hand. This arose from the necessity of first of all getting rid of the groups of enemies nearest the heart of the monarchy.

Selection of the Zone of Concentration.—It was only when this decision was reached that the Prussian staff sought to fix the zone of concentration of the forces destined to act against Austria.

The outline of the Bohemian frontier, and the position taken by the Saxon troops within seven marches of Berlin and five of Breslau, as well as the situation of the Austrian corps at Reichenberg and Trautenau, upon the highways conducting to the two capitals, led to the belief that these two large cities might be threatened. The Prussian provinces which therefore seemed exposed to the first blows of the enemy, were Lusatia and Silesia. It was impossible to cover them both with a single army. The space to be protected was too extended, and, moreover, the Bohemian frontier permitted the turning of an isolated army by the north or east.

Two separate masses were therefore required. This division was rendered still further necessary by the impossibility of feeding an excessively large number of men upon a limited area.

The separation of the first two Prussian armies at the outset, was afterwards very much criticised. The Prus-

sian staff very well understood that it was a defective formation, but considered it a necessity, replying as follows to the objections raised on this head:

"In acting thus, it is perfectly evident that an Austrian army concentrated beforehand, would be able to fall upon one of the parts of the Prussian army. But whatever disposition might be made, nothing could change the configuration of the theatre of war, nor alter the fact that there was an enemy stationed in Bohemia between Lusatia and Silesia."

Thus the configuration of the frontier, the presence of the enemy's forces, uncertainty as to the projects that he was supposed at this period to entertain, the obligation to protect neighboring provinces, and the necessity of occupying a region of considerable size for the supply of the troops, were so many reasons for leading the Prussians to assemble:

1st. *A first army*, composed at the outset, of the II. III. and IV. Corps under Prince Frederick Charles in Lusatia, around Kottbus, a railroad centre leading into Saxony and Silesia, and upon Berlin.

2d. *A second army*, composed at first of the V. and VI. Corps, and the detachments already established in Silesia, under command of the Crown Prince, cantoned upon the Neisse. The Guard, whose rôle was still undecided, was to take position between Baruth and Luckau. Finally the I. Corps was to be moved to Görlitz, to connect the two groups, and to be ready to reinforce either in case of need.

In order to hold Saxony in check, it was resolved to concentrate upon the frontier at Zeitz *a third army*, called *the Army of the Elbe*, composed of the VII. and VIII. Corps.

It was learned, toward the middle of May, that the States of the South would surely support Austria. It was further known that political reasons and the char-

acter of their organization would prevent dispatch in their movements. Prussia thus persisted in the project of taking vigorous action against the Duchies of the Elbe, Hanover, and Hesse, and of uniting then the different forces which had engaged on this side, and joining to them a division which had been left in observation at Wetzlar, in order to form *an army of the Main*, to be charged with contending against the South German States.

Finally, in order to prepare for all contingencies, *a reserve corps* was assembled at Berlin.

All this was, no doubt, complicated; but the dispositions made corresponded to the situation. They may be epitomized thus:

To concentrate one group of forces before each group of the enemy except in case of Austria; two against her.

The difficulties of this concentration were so evident, that in taking command the King announced that the composition of the armies was not final, and that he would modify it in accordance with the course of events.

Transports of the Prussian Army.—The orders were issued May 15 and 16. At this time the first regiments had finished their mobilization; the concentration transports began immediately, on the 16th, before the general mobilization was finished. In reality, these transports were made in two movements. The first, accomplished during the period of indecision, from the 16th to the 23d of May, was designed to secure Prussia against surprise and sudden invasion. It was executed by only four corps: the V. (Posen), VI. (Breslau), III. (Berlin), and IV. (Magdeburg.)

The VI., stationed in one of the threatened provinces, proceeded to Neisse and Frankenstein, almost entirely by ordinary roads. Its concentration, finished on the 21st, had occupied five days.

The V. was transported entirely by the Posen-Breslau-Kœnigszelt line, occupying twelve days, from the 17th May to the 28th.

The greater part of the III. was moved upon Güben in six days, from the 17th to 22d, by the line Berlin-Frankfort-upon-Oder.

The IV. was transported by the line running from Thuringia into Saxony, and finished its movement to Torgau and Herzberg by the 24th. Eight days were required.

At this time—toward the end of the month—the period of indecision closes. Prussia realizes that the enemies she has provoked are resolved to fight. She hears of their first movements, and decides to cover Lusatia and Silesia by two armies. The mobilization is finished. The forces on the first zone of assemblement must be moved to that upon which hostilities are expected, and the five corps left in rear added to them. The offensive is resolved upon; but it is not known to a certainty that this is possible, nor that Austria will allow time for it. The necessity arises, therefore, for Prussia to first insure the protection of her own territory.

The transportation of the I. Corps was then ordered from Kœnigsberg to Görlitz, *via* Kreuz and Frankfort-upon-Oder. This movement, commenced on May 24, by means of eight trains a day, was accomplished in ten days, ending June 2.

The II. Corps, intended for the II. Army, was transported from Pomerania to Herzberg by way of Berlin. Begun on the 23d of May, the movement was completed on the 2d of June, with eight trains a day, occupying thus eleven days.

The VII. Corps, except one division left in Westphalia, was concentrated at Zeitz (by the Münster and Düsseldorf lines), Cassel, and Eisenach. With eight trains a day, the movement was made in ten days, from May 27 to June 5.

The bulk of the VIII. Corps was transported from Coblentz to Halle by way of Cologne, Münden, and Magdeburg in ten days, from May 27 to June 5, by means of twelve trains a day.

The Guard did not arrive until the middle of June.

Strategic Deployment.—The concentration transport of the eight Prussian army corps occupied then twenty-one days, from May 16th to June 5. They formed, according to the Prussian staff, a mass of 197,000 men, 55,000 horses, and 3,500 vehicles, which thus, during the first week in June, occupied a curved line 444 kilometres [275 miles] in extent, reaching from the Saale to the Neisse, and passing by Zeitz, Halle, Torgau, Herzberg, Görlitz, Schweidnitz, Frankenstein, and Neisse.

This concentration gave then :

In the left wing, the *Army of Silesia*, having two corps, upon the front Waldenburg-Landshut, 18 kilometres and a half [about 11½ miles] in extent.

In the centre, the *I. Army*, upon the front Kottbus-Torgau, covering 89 kilometres [about 55 miles].

The distance separating these two armies was about 133 kilometres [83 miles], or six marches.

In this interval, at Görlitz, was placed the I. Corps, 74 kilometres [46 miles] from the right of the Army of Silesia.

In the right wing, upon the front Halle-Zeitz, was the Army of the Elbe, but a corps and a half strong, separated from the I. Army by a distance of 74 kilometres also.

It would have required twelve marches to assemble these three groups upon the centre.

This extension, and the consequent dispersion, presented dangers. But the dispositions made must be considered as only a provisional concentration, the points occupied forming but an accidental line—the line of

railway disembarking points. The necessity arose then of drawing the lines nearer together. Here other considerations came into view.

By closing up her corps, Prussia could begin operations on the 6th of June. She was ready for this closing movement, and had just learned that the concentration of the Austrians was far from being finished.

All the chances, therefore, were upon her side. Nevertheless, according to the official account, she had no disposition to take advantage of the favorable situation.

The King of Prussia, knowing that Austria intended to present a pacific motion to the Diet, was disposed to await the result of this action before taking the offensive.

Thus at this difficult pass, politics might still have been able to exercise an influence upon the concentration, at the very moment when one of the belligerents was ready to commence hostilities.

Consequently, the Prussians contented themselves with bringing their corps nearer together by flank movements parallel to the frontier, so as to be in readiness for executing a swift concentration. These movements ended on the 8th of June.

The forces then occupied the following positions:

I. Army: The II., III., and IV. Corps were in the vicinity of Görlitz, with the I. Corps.

They held Niesky, Binzlau, Wiegandsthal, and Warmbrünn, forming a mass of 93,300 combatants.

II. Army: This army, 115,000 strong, was upon the Neisse, between Brieg and Patschkau.

The Army of the Elbe was upon the Elbe, around Torgau. It contained 46,000 combatants.

The other groups were at Berlin (Reserve Corps), Minden (13th Division), Hamburg (Manteuffel Corps), and Wetzlar (Beyer Division).

The first two armies had a front of only 148 kilo-

metres [92 miles], from Seuftenberg to Waldenburg. They could be assembled upon the centre in three days. Including the Army of the Elbe, a general concentration could be effected within four or five days.

News was received about this time, which had the effect of still further modifying the situation.

On the 11th of June the first positive information reached the Prussians concerning the dispositions of the Austrians. This was to the effect that their principal forces were not in Bohemia, as at first supposed, but in Moravia, around Olmütz, and in a defensive attitude. From this the conclusion was drawn that Lusatia and Brandenburg were not threatened, and that Silesia alone could be the object of aggression. It was also discovered at the same time that the concentration of the Austrians was not yet finished, and that they had decided not to advance to the assistance of the Saxons.

The latter, on account of their weakness, were thus reduced to the sad prospect of abandoning their own territory, and moving into Bohemia to join forces with their allies.

The II. Army was ordered to make an immediate movement to the front, to draw its lines closer together behind the Neisse, to cover Silesia, and to hold itself ready for battle. It was reinforced by the I. Corps. The I. Army was directed to move by the left flank, for the purpose of bringing its parts together around Görlitz, where it would be in position to act either in Silesia or in upper Lusatia.

In reality, these dispositions made very little change in the situations of the three groups designed to contend, the one with Saxony, the other two with Austria.

The *II. Army* occupied the front Neisse-Patschkau, 29½ kilometres [18 miles] in extent, with a considerable depth, extending as far as Brieg.

The *I. Army* held the front Wiegandsthal-Niesky, 50 kilometres [31 miles] long.

The centres of the two armies were separated by only about 148 kilometres [92 miles], and their junction could be effected in three or four days.

While these movements were going forward, the influence of politics upon the preliminary operations was growing feebler. On the 14th of June, it ceased altogether, in consequence of a decision of the German Diet to commence hostilities.

The King of Prussia then resolved to take the offensive, and as his armies were well in advance, he determined to unite them upon the enemy's territory, which for him was the quickest possible means of bringing them together.

It was thus that the invasion of Saxony was decided upon (which permitted the Army of the Elbe to support itself upon the I. Army by way of Bautzen), and that the I. and II. Armies were given orders to invade Bohemia.

To sum up, the transports of the three Prussian armies (I., II., and Army of the Elbe), begun on May 16, were finished on June 5.

The strategic deployment was completed on 18th of June, by the last movements of the Guard and the reserve troops.

Prussia had thus been able, in twenty-one days, to move masses to her southern frontier, which the Austrian staff estimated in *rationnaires* as follows:

	MEN.	GUNS.
I. Army	97,020	300
II. Army	120,000	342
Army of the Elbe	48,840	144
Totals	266,850	786

The concentration of the Prussian armies in 1866 was, as we see, extremely difficult. This arose from a complicated and doubtful political situation, which

lasted until the end of the movement, and from enforced ignorance of the plans of the various adversaries—their points of assembly and the forces which they counted upon putting in line. It is also to be observed that upon learning of the choice of Moravia as the Austrian zone of concentration, the Prussian staff was greatly surprised, and could explain this selection only on the ground of "the traditional selfishness of the house of Austria, which induced it to abandon its allies in order to seek before everything the recovery of one of its former provinces, Silesia." In reality, however, the choice of this zone was dictated by other considerations. Seeing Prussia ready before her, Austria had resolved to stand upon the defensive, and in this persuasion had adopted for zone of concentration a region protected by fortified places situated upon the flank of the adversary's lines of invasion. If the Austrian staff denied the fact later, and attributed it to political considerations, this was to cast all the odium of the war upon Prussia.

We know that defeat was the consequence of the system adopted by the Austrians.

2ND.—CONCENTRATION OF THE GERMAN ARMIES IN 1870.

In this year, the concentration of the Prussian armies was simpler and easier, although the number of effectives was very much higher.

This arose from various causes: first of all, from the improvements realized since 1866; then from the well-defined character of the political situation.

Railroad transport service had undergone melioration, and at the time the war broke out, reached a high state of efficiency.

All the movements were prepared in advance. The 16th of July, 1870, was fixed upon as the first day of mobilization, and on the 17th, the tables of march were sent to the army corps.

A few days afterwards, food for six weeks was collected near the zone of concentration, and nothing remained but to assure the protection of the early assemblements on the frontier; but it was not supposed that strong enough masses could be sent forward to prevent access of the enemy.

Surveillance of the Frontier by a Defensive Screen.—The question then was simply to guard the frontier with care, and to display enough troops to make it respected. This was so much the more essential, as it was expected that the French army would take the offensive. With this before them, the garrisons of the Rhenish Provinces and of the Palatinate were raised to the war effective at the earliest practicable moment, and charged with observing our movements by reconnaissances made in all directions.

It was thus that the Rhenish Provinces were guarded from Treves to Bliescastle, during the interval between July 16 and July 25, upon an extent of 68 kilometres [42 miles], by three regiments of infantry and two of cavalry, numbering in all about 10,600 men. After July 25 another regiment of cavalry was added.

In the Palatinate, the frontier was protected between the 16th and 19th of July, from Homburg to Lauterbourg, a distance of 72 kilometres [45 miles], by three battalions and five squadrons (six after July 22), supported in rear by a brigade of infantry and by detachments of special arms stationed at Landau and Germersheim; or a total of about 10,000 men.

Thus, up to July 23, a defensive screen of about sixteen battalions and fourteen squadrons sufficed to cover a reach of 140 kilometres [87 miles] of frontier.

We know, however, that this zone did not become the object of aggression.

After the 23d of July, the eighth day of mobilization,

the situation changed. There was already in the Palatinate a complete division of infantry, the 4th Bavarian, and upon the right bank was the Baden Division with eight squadrons, ready to support it.

Moreover, at this date, the first mobilizations had terminated.

Transport of the Prussian Armies.—Prussia learned the composition of the French army and the positions of its different corps upon the frontier. In seeing them thus assembled without awaiting the arrival of the reserves, the Prussians were strengthened in the belief of an offensive designed to prevent their concentration.

Hence it became essential first of all to protect the troops while leaving their transports at the railroad stations, and to cover the strategic deployment.

Regarding the I. Army, nothing was to be feared. Its line of march followed the neutral frontier of Luxemburg, which formed a shelter. If the French offensive assumed shape, this army was always in condition to arrest the movement in season. It was the same with the III. Army. It had no cause for alarm in the relatively weak group occupying lower Alsace. However, its proximity to the frontier imposed upon it a very close concentration.

The II. Army, on the contrary, could be assailed by the masses assembled in Lorraine, and reduced to the defensive. The Prussian staff admitted this hypothesis during the few days of uncertainty as to our movements.

Consequently it resolved:

1st. Not to unload the forces of this army too near the frontier;

2d. To have the disembarking stations in rear of a line of defense;

3d. To move this army forward only when in concentrated formation, with its parts ready for action.

The line of the Rhine, at six marches from the frontier, was chosen as the disembarking region.

Orders were given in consequence, and on July 24 the transports began.

The details of this rapid displacement of a half million of men, 150,000 horses, 1,200 pieces of artillery, and the enormous *matériel* requisite for this vast host, are well known. It is needless to review them; it will suffice to recall that this movement was terminated on the date prescribed, August 5, or in thirteen days. The transport of an army corps at the rate of twelve trains a day upon single-track roads and eighteen upon double-track lines, required, as we have seen, only a space of from three and a half to five and a half days.

Strategic Deployment.—Orders for the strategic deployment were issued on July 23, and communicated to all the corps commanders.

According to these orders the I. Army was to be concentrated by August 2, between Treves and Hermeskeil.

The II. Army, by August 5, between Bingen and Mannheim.

The III. Army, by August 3, between Landau and Carlsruhe.

These movements were executed in accordance with the plan prescribed, and gave the following results:

I. Army (2 corps). The VII. Corps, disembarking at Aix-la-Chapelle and Call, July 26 and 27, reached the zone of concentration in an average of six marches. The VIII. Corps, mobilized in the vicinity of this zone, was assembled by ordinary roads.

This army, 60,000 strong, was concentrated August 1, upon the Treves-Birkenfeld line, along a front of 48 kilometres [about 30 miles]. Detachments occupied the line of the Sarre from its mouth to Sarrebruck, and its principal crossings.

II. Army. This army disembarked upon a defensive position, while awaiting fuller information regarding our projects.

Its four corps were transported upon two railroads only, and were cantoned in the neighborhood of the cities where they had disembarked. None of these troops had been obliged to make a single march. For this army the general situation was modified before the end of the transport. After July 28, the German leaders knew that they had not to fear an offensive on our part. Hence the corps already disembarked, and the two cavalry divisions of the II. Army, were pushed forward to the left bank of the Rhine. From this it resulted that the first strategic deployments were completed under peculiar conditions.

The corps disembarking first, marched toward the enemy's frontier, and cleared the way while the transport was still going on. By an order of the commander-in-chief the disembarking points were located nearer the frontier, and the trains, which at the outset had stopped on the Rhine, now continued their movement into the Palatinate.

On the 1st of August this army was established upon the line Fürfeld-Hochspeyer, over a front of 45 kilometres [28 miles], with two corps in the first line, covered by two divisions of cavalry. These two corps each held one of the high-roads leading to our territory, which, with the adjacent communications, were to form the lines of operations. Each high-road had also a corresponding railroad.

The other corps, for the most part still incomplete, were écheloned in rear, at distances varying from 29 to 45 kilometres.

As to the *III. Army*, it had on this date 116 battalions, 86 squadrons, and 300 guns concentrated from Bergzabern to Carlsruhe, upon a front of 39 kilometres

[24 miles]. Its future line of operations, which was to run through the Rhine plain between the Vosges and the river, included two principal roads: that from Landau to Strasburg by way of Wissembourg, Soultz, and Haguenau; and that from Germersheim to Strasburg, by way of Lauterbourg and Seltz.

The first, the most important, was supplemented by a railroad. Its *débouché* beyond our frontier was occupied at Bergzabern, 7 kilometres from Wissembourg, by a division of infantry, which was supported by a corps cantoned at Landau, 13 kilometres [8 miles] in rear.

The second road was occupied by a brigade at Rheinzabern, and by a corps in rear at Germersheim.

These two highways were covered by outposts as far as the frontier; all the important crossings upon the flanks were guarded, and connection was established upon the right with the neighboring army.

To provide against an offensive movement by our Alsace troops, orders were given for an immediate assemblement upon a chosen position. The forces cantoned upon the left bank of the Rhine could be united in half a day.

On the 1st August the transports of the Germans were still unfinished, and yet the strategic deployment of their principal masses could be considered as ended.

Although these armies were, therefore, not in a condition of entire completion, they yet at this time commenced their first offensive movements, with a view of attacking the frontier.

To summarize, at the date indicated, the group composed of the three German armies presented on its base of operations the following formation:

Upon each wing, an army pushed to the enemy's frontier, constituted an advanced échelon. In the centre, the principal army, at a mean distance of two marches from the wings, formed a second échelon. These

masses occupied in force the railroads and ordinary roads leading to our territory. Each of the armies of the wings had its outward flank resting on a line of defense: the Moselle to the north, and the Rhine to the east. The one on the left possessed, moreover, two strong places upon its base. The corps were placed in échelon, and sufficiently concentrated to be united in a day, although there no longer was reason to suppose an offensive movement on our part.

Finally, the corps were écheloned upon points controlling the principal communications.

§4.—ATTACK OF FRONTIERS.

I.—Character of this Operation.

Before the invention of railroads, upon the breaking out of war, the first encounters were liable to take place in any locality. The belligerent whose forces were ready entered upon the action at once, penetrated the enemy's territory, gained the most favorable positions, and sometimes reached the heart of the country before delivering battle. In every instance, the difference in degrees of preparation between the two opposing armies was considerable, and the masses could be directed against each other only by the ordinary roads of the country. Consequently between the beginning of the offensive and the first engagements, there were long marches, covering many days. At the present time this is no longer the case. The railroad systems of each country in a brief period pour forth the armed masses upon the frontier. The duration of the concentrations is nearly the same on each side, and the zones upon which they are effected, are brought nearer together.

As a result, the first shocks will generally be felt upon the frontiers. The first act, therefore, of an army taking the offensive will henceforth be clearly defined—*the attack of the frontier.*

Sometimes this will be accomplished after the first or second march, as in Alsace, in 1870. Under other circumstances, the assailant will have, perhaps, three or four marches to make before engaging. But from the time of the first movements, he will be in contact with the adversary, and the meeting will always take place near the boundaries of the belligerents' territories.

The first successes will necessarily be the result of the strategical and tactical dispositions made at this moment. Their consequences will influence the remainder of the war so powerfully that it is advisable to seek to discover if there are not rules to be followed and principles to be observed in such a case, as in all other operations of war.

II.—Exploration of Frontier Zones.

We have seen that, in order to succeed, the strategic deployment should be effected at a little distance from the frontier, and be covered by independent cavalry divisions.

The latter should then prevent all patrols and all reconnoitring parties from piercing their line. For this, they must first of all know where the enemy is; that is to say, resolve each day, each hour, and under all circumstances, this perplexing problem, "without the solution of which a general-in-chief can act only in the dark. He is then like a soul in travail, like a blind person that does not know where to direct his steps, that advances on one side only to fall back on the other, that consumes himself in impotent experiments, in restless hesitation, up to the very moment when the first shell from the enemy comes to acquaint him that the latter has been able to see clearly and to take the offensive."*

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*Von der Goltz.

From this it must be concluded that *the first act of every army beginning operations is to send its cavalry upon exploration service.*

The latter should both reconnoitre and cover. But information is not gained by the cavalry alone. The inhabitants, the newspapers, and secret agents, are so many sources of intelligence. One might easily be led to believe that these are the best sources, but this is a mistake. An army in the field, especially an army which has taken the offensive, should make calculations upon informing itself only through its cavalry. Hence the importance, for this arm, of thorough instruction in time of peace, and a sound organization.

As to the limits of the zone of exploration, they will in the beginning be somewhat restricted, in most cases not extending beyond the frontier, for the enemy is also forced to defend his territory. The latter will, likewise, seek thus to gain information, and in consequence to push to a distance numerous squadrons to reconnoitre his adversary's points of concentration. In such a case, it will often happen that the zone of exploration will not be extended beyond a day's march. But, as a rule, it should be stretched to the front as far as possible. The greater the distance, the greater will be the security of the army; for it will then have more time in which to concentrate in case of attack, greater space in which to move, more towns for cantonments, and more abundant sources of supply.

It follows from these considerations that the first encounters will very probably take place either between the opposing cavalry or between small infantry units.

In these collisions, success will sometimes be due to the superiority of the mass and to the celerity of its movements; but oftener to the audacity of the leader, to his tactical skill, and to the special qualities which he may have developed.

This exploration service will naturally be directed upon the roads debouching upon the front and flanks of the army. But it is possible that this will not suffice to inform the general-in-chief. He will then be obliged to throw patrols of officers to the front, whose duty it will be to penetrate beyond the veil formed by the enemy's cavalry, in order to endeavor to discover the movements of his masses, their strength, and their positions.

The wars of 1866 and 1870 offer us examples of enterprises of this character.

The development of the cavalry screen will depend upon the extent of the strategic deployment of the main forces; and the distance to which it may be pushed will vary according to the positions of the enemy.

This will naturally be the moment to call to mind that the first encounters, even the most insignificant, have a considerable moral influence upon the troops.

It is important then to have the numerical superiority in the beginning, even in these first cavalry engagements.

Consequently, the first reconnaissances upon the frontier zones should be made by sufficiently large units.

The number of cavalry divisions at an army's disposal, will necessarily have a direct influence upon these dispositions and their results.

In foreign armies, and especially in Germany, the military authorities appreciate this fact. The Prussians owe their convictions in this respect to Frederick II. In their estimation, the general who has not in his hand a strong and well-drilled cavalry, can neither move in a rational manner nor aspire to success.

"Proper information," says Frederick, "assures great superiority. If one knew the situation of the enemy at each instant, he would be sure, even with an inferior army, of being everywhere the stronger." *

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*Frederick the Great, *General Principles of War* (1753).

It will then be only after having received these first accounts of the enemy's intentions, that a leader will be able to properly direct his masses toward the hostile frontier. His movements will feel the influences then of the state of uncertainty in which he is kept for a period, and to which he will generally be obliged to submit.

As a result, at the beginning of the campaign, when the concentration is terminated and the moment arrives for an advance, the first marches will almost always require to be conducted with great prudence. They merit the more attention from the fact that the first successes or the first reverses will ordinarily be the result of the dispositions made at this time of hesitation; and the importance of these initial engagements is emphasized upon recalling how great an influence they exercise upon the remainder of the campaign.

The best instruction in this connection is that furnished us by recent wars.

III.—Attack of the Bohemian Frontier in 1866.

We have already seen that in this year the concentrations of the Prussian armies were strongly influenced by the political difficulties in the midst of which they were effected.

But on the 14th of June, the situation cleared. The attitude of the various adversaries was at length ascertained. Prussia determined to take the offensive, and ordered her armies to make their final concentrations.

After these movements, which ended on June 18, and which immediately preceded hostilities, the I. Army, the Army of the Elbe, and the II. Army were respectively assembled around Görlitz, Torgau, and Neisse, where their headquarters were established. These points were distant but two marches from the enemy's frontier.

The cavalry scouts had been pushed to the boundaries

of the territory, and the various roads leading into Moravia and Bohemia were occupied in force. Nothing remained but to attack the frontier.

The order was issued on June 22. There was uncertainty as to whether the frontier would be defended, but the supposition was that it would be, at least in front of the II. Army, which was the weakest, and which, moreover, had dangerous defiles in its front.

In consequence, the operation commenced by the I. Army and the Army of the Elbe. It gave rise, as is well known, to murderous combats, the results of which had a decisive influence upon the issue of the campaign.

To relate these in detail would require too much space; a simple reference to them will, no doubt, be sufficient to call to mind their importance.

The events of 1870 contain lessons of experience in the matter we are considering, which have for us a still more direct interest. It will be proper, then, to study them with all their various developments.

IV.—Attack of the Alsacian Frontier in 1870.

1st.—Dispositions made by the Germans.

In July, 1870, the III. German Army had effected its concentration upon the line Landau-Carlsruhe, divided into two parts by the Rhine. It was known by the Germans, moreover, that we had no intention of taking the offensive in Lower Alsace. They did not hesitate then to effect their assemblements within half a day's march of the Lauter. On the 28th, certain thenceforth of numerical superiority, and seeing that we had let slip the hour for action, they resolved to move forward and attack our frontier.

On the 30th, a telegram from Von Moltke conveyed the order to the commander-in-chief of the III. Army in these terms:

"His Majesty considers it expedient that as soon as the III. Army has been reinforced by the Baden and Würtemberg divisions, it should advance toward the south by the left bank of the Rhine, to seek the enemy and attack him. In this way the establishment of bridges to the south of Lautersbourg will be prevented, and the whole of South Germany protected in the most effective way.*

"Signed: VON MOLTKE."

This order was not immediately executed; the Crown Prince had not yet completed his trains. But three days later, August 2, his army was ready, and to provide against an offensive on our part, of which we were far from thinking, he at once drew his lines closer together.

In consequence of these movements, this army, on the 3d, occupied the following positions:

The 4th Bavarian Division at Bergzabern, 7 kilometres [between 3 and 4 miles] from our frontier; the remainder of the II. Bavarian Corps in rear at Germersheim.

The V. Corps at Billigheim, 8½ kilometres in rear of Bergzabern.

The XI. at Rohrbach, at the same distance.

The I. Bavarian at Lingenfeld.

The Baden Division at Hogenbach, 7 kilometres from the frontier.

The Würtemberg Division at Knielingen, upon the right bank of the Rhine, near Maxau.

The 4th Cavalry Division somewhat in rear at Offenbach, near Landau.

The outposts of this army extended from Schweigen to Scheidt and Minfeld, and from Buchelberg to Neuburg.

They were thus, those of Schweigen at 1,400 metres [$\frac{9}{10}$ of a mile] from the outskirts of Wissembourg, and those of Neuburg at 1,500 metres from the frontier.

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* *Franco-German War*, Part 1.

The front of the III. Army did not exceed 21 kilometres [13 miles]. It was concentrated upon a space from 9 to 10 kilometres deep, less than half a day's march, holding each of the important roads leading from the Palatinate into Alsace, by a division.

Resolved to cross our frontier the next day, the 4th, and to take the offensive vigorously, the chief of the III. Army sent to his corps commanders the following remarkable instructions:

"HEADQUARTERS, LANDAU, August 3.

"My intention is to move to-morrow as far as the Lauter, and to cross this stream with the advanced troops.

To this end the forces will traverse the Bienwald by four roads. The enemy should be thrown back wherever found. The different columns will march in the following order:

"1. The Bavarian Bothmer Division, forming the advanced-guard, will move upon Wissembourg and endeavor to seize it. A sufficient detachment will flank its right by Böllenborn and Bobenthal. The division will leave its bivouac at 7 o'clock A. M.

"2. The remainder of the Hartmann Corps, the Walther Division included, will set out at 4 A. M., and move upon Ober-Otterbach, passing around Landau by Impflingen and Bergzabern.

"The trains of this corps will proceed, during the course of the morning, as far as Appenhofen.

"3. The 4th Cavalry Division will be assembled to the south of Mörlheim by 6 A. M., and will march by way of Insheim, Rohrbach, Billigheim, Barbelroth, and Capellen, as far as Otterbach, 4,000 paces to the east of Ober-Otterbach.

"4. The V. Corps will leave its bivouac at Billigheim at 4 A. M., and move by Barbelroth and Nieder-Otterbach, upon Gross-Steinfeld and Kapsweyer.

"It will have its own advanced-guard, which will push beyond the Lauter, and station its outposts upon the heights on the further bank. The trains will remain at Billigheim.

"5. The XI. Corps will quit Rohrbach at 4 A. M., and direct itself, through the Bienwald, by Steinweiler, Winden, and Scheidt, upon the 'Bienwalds-Hütte.' It will have its own advanced-guard, which will push forward beyond the Lauter, and place its outposts upon the heights on the further side. The trains will be left at Rohrbach.

"6. The Werder Corps will march upon Lauterbourg, by the high road. It will endeavor to take possession of this locality, and will establish outposts upon the right bank. The trains will continue at Hagenbach.

"7. The Von der Tann Corps will leave its bivouacs at 4 A. M., and following the high road, proceed by Rülzheim to Langenkandel, where it will bivouac to the west of the town. The trains will remain at Rheinzabern. The corps headquarters will be moved to Langenkandel.

"8. I shall be upon the heights between Kapsweyer and Schweigen, during the morning, and shall probably establish my headquarters at Nieder-Otterbach.

"Signed: FREDERICK WILLIAM,
Crown Prince."

2ND.—DISPOSITION MADE BY THE FRENCH ARMY.

While this offensive was preparing, we were yet in the period of organization.

On the 1st of August, in a letter to General Dejean, then Minister of War, Marshal Lebœuf, chief-of-staff, stated that it was the intention of the Emperor to move our 7th Corps (Douay), as soon as possible, toward Lower Alsace, to unite with the 1st (Mac-Mahon), which was to be directed from Strasburg upon Haguenau.

Marshal Mac-Mahon, apprised of these projects, and disturbed by the reiterated demands of the municipal authorities of Wissembourg, arising from the incursions of Bavarian patrols, decided to change the position of his troops.

He consequently issued the following order on August 2d:

"HEADQUARTERS, STRASBURG, August 2, 1870.

"The 1st Division will leave its positions on the morning of the 4th, to take post at Lembach, where the division staff is located; it will hold a regiment at Nothweiler, a battalion at Obersteinbach, and a regiment at Climbach. At Lembach it will post a brigade, the battalion of chasseurs, the artillery, and the engineers. General Ducrot will give detailed orders concerning the ground to be occupied by troops of the various arms. He will have under his orders the 2d Division of Infantry, which will rest its right upon Altenstadt and occupy Wissembourg (where its headquarters will be located), Weiler, and the neighboring positions, as well as the pass of the Pigeonnier, by which it will be connected with the 1st Division. The 1st Brigade of Cavalry, composed of the 3d hussars and 11th chasseurs, will be established the same day at Geissberg, so as to connect with the 2d Division of Infantry, and be in condition to obtain information upon the right as far as Schleithal. General de Septeuil will receive instructions from General Ducrot upon the positions to be occupied by the various bodies of troops, and the part each is to take. General Ducrot, being acquainted with the character of the ground at Wissembourg, and in the vicinity, will assume the task of indicating the positions to be assigned the different portions of the Douay Division.

"By order the Marshal commanding the 1st Corps,

"Signed: COLSON,

"General and Chief-of-Staff."

This order was supplemented by the following instructions, which General Ducrot addressed to General Abel Douay, on August 3d:

1ST ARMY CORPS.—1ST DIVISION (OFFICE OF THE GENERAL COMMANDING).

"REICHSHOFFEN, August 3, 1870.

Instructions of General Ducrot, August 3.—"As indicated in the Order of His Excellency, the Marshal, which you have received, you will move upon Wissembourg with your division, the 3d hussars, and 2 squadrons of the 11th chasseurs. You will establish your 1st brigade upon the Geissberg plateau; the 2d to the left, upon the Vogelsberg Plateau, occupying thus the line of crests which, by the road from Wissembourg to Bitche, is connected with the pass of the Pigeonnier; the cavalry and artillery upon the southwest slope of the rising ground. I think, moreover, that it will be easy to march your troops by adopting a narrow front. You will this evening place a battalion in Wissembourg. Early to-morrow morning you will send a regiment of the 2d brigade to support the 96th in the position occupied by it between Climbach, the Pigeonnier, and Pfaffenschlick; the 96th will move in advance, in the direction of Nothweiler; one of its outposts will be established at Durremberg, connecting thus with the left of your division toward Climbach. My left will be at Obersteinbach, where it will be near the right of the V. Corps at Hulzelhof. My headquarters and the bulk of my division will be at Lembach; you may establish your headquarters either at Geissberg, Oberhoffen, or Roth. The cavalry brigade is placed under your immediate orders, and you will utilize it to obtain information, either in front of Wissembourg, or to the right in the direction of Lauterbourg."

At the same time the 3d Division (General Raoult) was to move, on the 3d, from Strasburg to Haguenau, and on the 4th to Reichshoffen. It was to be replaced at Haguenau by the 4th Division (de Lartigue), then at Strasburg. The 7th Corps was to direct its 1st Division (General Conseil-Dumesnil) by rail, from Colmar upon Strasburg, while its artillery was to follow on ordinary roads.

Upon receipt of a still further communication from the sub-prefect of Wissembourg, MacMahon ordered Douay to execute on the 3d the movement which had been prescribed for the 4th.

This march of 27 kilometres, made on a warm day, required a rest of three hours at Soultz, and very much fatigued the troops.

The presence of the enemy could not have been suspected, for the cavalry brigade which accompanied the 2d Division remained on the left of the column.

The troops arrived at nightfall, and immediately took the positions previously indicated.

The 2d battalion of the 74th (Commandant Liaud), was sent to Wissembourg.

The 78th was designated to move at daylight, to relieve the 96th at the pass of the Pigeonnier.

Commandant Liaud established two companies as a grand-guard upon the northern ramparts of Wissembourg.

On the evening of the 3d, our forces were, then, distributed as follows:

1ST CORPS (MAC-MAHON).

1st Division (Ducrot) at Reichshoffen;

2d Division (Douay) at Wissembourg;

3d Division (Raoult) at Haguenau;

Brigade of cavalry (Nansouty) at Seltz, 10 kilometres from Lauterbourg;

Brigade of cavalry (Michel) at Brumath;

1st Division (Conseil-Dumesnil) of the 7th Corps, *en route* from Colmar to Strasburg.

The respective positions of the belligerents may be briefly given as follows:

In front of our border an army of 170,000 men (the VI. Corps and the 2d Cavalry Division not having joined yet), concentrated, ready to fight, its outposts at 1,500 metres from our territory, well informed by its cavalry, aware of our numerical inferiority and of the impossibility of our acting efficiently, and in condition to at once resolutely take the initiative of the movements.

On our side, a division of but 6,600 men, all told, ignorant of the presence of the enemy, uncertain as to his plans, and acting under the impression that its part was simply one of surveillance. It was, moreover, protected only by two or three infantry grand-guards, while the cavalry at its disposal bivouacked in its rear.

As to assistance from other portions of the corps, there was nothing to hope in this direction. The nearest, the Ducrot Division, was 25 kilometres, a day's march, distant. It could not arrive in time to prevent the advanced forces from being overwhelmed by superior numbers.

3D.—COMBAT OF WISSEMBOURG, AUGUST 4, 1870.

Preliminaries.—On the morning of the 4th, the Germans began the execution of the order issued the evening before. The different forces had set out at the hours prescribed, each grand unit making its dispositions in expectation of an encounter with the enemy, the 4th Bavarian Division covering its right flank by a detachment. (*See Plate XXIII.*)

On his arrival at Wissembourg, General Douay was apprised of the strong assemblements to the north of the Lauter.

He concluded from this, that the Prussians were pre-

paring an offensive reconnaissance, and thought to decide the matter definitely the next day by gathering information in the front.

At daybreak on the 4th, he moved two squadrons of the 11th chasseurs forward, supported by a battalion of infantry and a section of artillery. These were ordered to reconnoitre the ground beyond Wissembourg.

The squadrons left the infantry and artillery in position, advanced toward the town, moved around it without entering, gained the frontier by the Landau road, following it for some time; proceeded thence along the Spire road, and returned to camp at 7:30 P. M. without having met the enemy.

The report of the leader of this force says, "The reconnaissance extended several kilometres beyond the frontier, and only a few hostile sharpshooters were seen."

Everything conducts to the belief that this reconnaissance was made principally in the direction of Spire, which was the reason why the Bavarian outposts were not encountered at Schweigen, 1,500 metres from Wissembourg.

Very early on the 4th, the Marshal was warned by the Emperor that he would be attacked on that day. He immediately sent General Douay the following dispatch, which reached the latter at the moment when the reconnoitering party of the 11th chasseurs was returning to its place of bivouac:

"STRASBURG, August 4, 5:27 A. M. (Dispatched at 6 A. M.)

"Have you gained any information this morning leading to the belief that the enemy is assembling in force in your front?

"Answer immediately. Be watchful, ready to fall back upon General Ducrot by the Pigeonnier, should you be attacked by very superior numbers.

"Warn General Ducrot, *en route* for Lembach, to be also upon his guard.

"Signed: MAC-MAHON."

At this time the report of the squadrons of the 11th chasseurs had convinced General Douay that he had nothing to fear. It was for this reason that he sent his brigade generals the following order:

"In the not very probable case of a concentration upon the Ducrot Division, the movement will be commenced by the 2d brigade. It will follow the direction of the crests to the Wissembourg-Bitche road, passing thus by the base of the Pigeonnier mountain and the village of Climbach.

"General Ducrot's headquarters are at Lembach.

"The 96th covers the left of the 2d Division in the direction of Nothweiler, on the extreme frontier."

A few minutes after 8 o'clock, the discharge of cannon from the direction of Schweigen, announced the approach of the enemy. A Bavarian battery had just opened fire upon the town of Wissembourg.

Development of the Combat.—A sharp fusillade immediately burst forth from the ramparts when the Liaud battalion caught sight of General Bothmer's advanced-guard.

In the camp there was great surprise at this attack. No one expected it The various bodies had sent men to Wissembourg on fatigue duty, who were obliged to hasten back to their companies.

General Pellé, commanding the 1st brigade, was reduced from 7 battalions to 3. He had a regiment at the pass of the Pigeonnier, 4 kilometres distant from the theatre of the engagement, and a battalion of chasseurs at Seltz, at a distance of 20 kilometres. The latter was acting with the Nansouty Brigade, as was also a bat-

talion of the 50th regiment of the line. Nevertheless General Pellé at once moved to the outskirts of the town with the first Algerian sharpshooters, energetically resisting the advance of the Bothmer Division. One battery at first, then two, responded to the Bavarian guns. We were then 2,700 against 12,000. In spite of this disproportion, the vigor displayed by the sharpshooters arrested the progress of the enemy.

Towards 10 o'clock the right detachment of the Bothmer Division reached the Lauter, and turned toward Wissembourg, taking our troops upon the left flank.

At the same time the XI. Prussian Corps arrived at Schleithal, 6 kilometres from our right, to the south of the Lauter.

General Douay then comprehended the gravity of the situation, and moved the 2d brigade (Montmarie) to positions around Geissberg, favorable for action.

The Septeuil Cavalry was charged with connecting the two brigades.

The troops of the Montmarie Brigade were hardly in place before two battalions of the XI. Corps arrived at the point of junction of the Schleithal and Strasburg roads, and opened a heavy fire upon them. Our two divisional batteries replied as best they could, dividing their fire between these and the batteries now established upon the Windhof.

The struggle was maintained with singular energy, and near the town the resistance of the sharpshooters obliged the Bavarian Division to await the arrival of the heads of column of the V. Corps.

The latter soon appeared in sight, moving upon Altenstadt.

From the summit of the Geissberg, General Douay watched the course of the contest. When he saw that the enemy's masses were pouring in from all sides,—by the roads north of the Lauter and by the Lauterbourg,

Niederwald, and Schleithal roads,—he comprehended the danger of prolonging the engagement.

He immediately sent General Pellé orders to make a slow retreat, for the purpose of giving Liaud, of the 74th, time to rally his forces, and directed the latter to evacuate Wissembourg.

He was on the point of giving the same orders to General Montmarie, when he was mortally wounded by a fragment of a shell, dying a few minutes afterwards.

This event increased the gravity of the situation.

General Pellé was not informed of it until toward noon. At this time he was hotly pressed by the enemy. The V. Corps, passing Altenstadt, which it found unoccupied, fell upon the right flank of the sharpshooters. The II. Bavarian had resumed the offensive, and five batteries posted on Windhof supported these movements. Upon other parts of the field six additional batteries overwhelmed us with projectiles.

We were then making resistance with twelve pieces and six mitrailleuses against sixty-six guns of the enemy.

The 1st tirailleurs, under Commandants Sermensan, de Lammerz, and de Coulanges, coped single-handed with the troops of the two corps by which they were beset.

Soon they were completely outflanked, and their line of retreat was threatened.

This regiment had lost 600 men out of 2,200. It was nearly enveloped when General Pellé learned of the death of General Douay, and received the latter's order.

He then gave the signal for retreat, and this gallant force was thus obliged to abandon to the enemy the ground which it had so heroically defended.

It was nearly one o'clock. The sharpshooters, leaving the valley, withdrew slowly toward Geissberg, while information on the situation was sent to the commander of the 74th, at Wissembourg. But at this instant the attack was developing around this place, and when Liaud

decided to retire, he perceived that evacuation of the town was impossible. He then directed two companies upon each gate to dispute possession with the assailants. But the Haguenau gate had been opened to the Bavarians by one of their countrymen who lived in the town. Liaud retook it, making a vigorous offensive movement in return.

In the meantime the Landau gate was carried by the enemy. At this moment Liaud was wounded and forced to turn over the command to a captain.

Each group of two companies found itself, a few minutes later, surrounded and out of condition to continue the contest. That at the Bitche gate, which resisted longest, learning of the retreat of the division, was obliged to surrender towards three o'clock in the afternoon.

500 men thus fell into the hands of the enemy.

The latter was then master of the place, and thenceforth resistance was to be concentrated at the farm of Geissberg.

There General Pellé ordered dispositions to be made for retreat, and rallying the sharpshooters, who again took up their knapsacks, led them, as he had been ordered, toward the heights of the Pigeonnier.

But the troops of the 2d brigade were now too far engaged to be able to break off the action.

The four battalions composing it, commanded by energetic leaders, were to contend, unsupported, against the masses of the V. and XI. Corps. The cavalry had been moved to the rear, toward Riedseltz.

The resistance was renewed in front of Geissberg.

There a battalion of the 50th, led by Lieut. Colonel de la Tour d' Auvergne, repulsed the first attack, which was very violent; but obliged to yield to the compact masses surrounding them, our troops became divided at the very moment when Marshal MacMahon arrived at

the pass of the Pigeonnier, inquiring for General Montmarie. The remains of the two battalions of the 50th and 74th, under Commandant Cécile of the 74th, shut themselves up in Geissberg. The third battalions of the same regiments took post at the farm of Schafbusch, 500 metres to the west.

The fight then waxed desperate. The defenders of Geissberg, by their continuous fire and by two bayonet charges, repulsed the repeated assaults of the Prussians. The latter endeavored to overwhelm them by their batteries; but the resistance continued with unabated energy up to the moment when the ammunition was exhausted, and the leader Cécile, who had so well sustained and encouraged his troops, had fallen severely wounded.

At this time, out of 1,200 men with which these two battalions began the action, there remained only 200, with a few officers.

Shut in upon all sides, without means of continuing the struggle, they were forced to lay down their arms.

The combat was drawing to an end. Our battalions, in obedience to the orders received, had retired upon Kleeburg, losing one piece which had been dismounted.

The defenders of Schafbusch alone held out, under the orders of Lieut. Colonels Baudoin and la Tour d' Auvergne.

But after the taking of Geissberg, seeing the enemy debouch upon the plateau in solid masses, they fired several volleys which arrested him; and then, profiting by the hesitation produced in his ranks by these discharges, retired in good order toward the wood of Bubeneich, where they disappeared.

The Germans contented themselves with throwing their last shells at this column.

It was about half past two; the action was ended, and the enemy not in condition to attempt pursuit.

Comments.—From 7:30 A. M. until 2:30 P. M., a division of 6,663 men and 302 officers had fought against three German army corps.

It had yielded only after losing its general, 2,221 men (700 of them prisoners), and 89 officers.

The loss in killed and wounded alone was 23 per cent.*

It had disabled 1,460 men, and 91 officers of the enemy, and for seven hours had resisted the attack of 70,000 troops, supported by 144 guns.

It had then fought in the proportion of one man against ten.

Notwithstanding the surrenders at Wissembourg and Geissberg, this action was most honorable.

But the defeat was not the less a great misfortune. The confidence of our troops was shaken, that of the enemy excessively heightened; the prestige of our arms was lowered; the soil of our country was trodden by the foreigner.

Causes of the Defeat.—At the outset, an unduly excited public opinion sought to find the cause of this reverse in a lack of vigilance or a fault in our strategy.

In reality, if the morning reconnaissance had been made in a different manner, like those of the Prussians, for example, there is no doubt that General Douay would have received timely notice of the enemy's presence. For this it would have sufficed if the brigade of cavalry had directed two squadrons upon each of the roads leading from Wissembourg to the north, and the reconnaissance been pushed to a distance of not more than seven or eight kilometres.

General Douay would thus have been enabled to fall back and avoid a disaster.

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*The proportion of losses at Marengo was 18.6 per cent.; at Jena, 4 per cent.; at Eylau, 15.8 per cent.; at the Moskwa, 16.1 per cent.

His advanced position exposed him to dangers only in case of failure to keep himself informed of what was going on in his front.

If on the evening before, in his march upon Wissembourg, his division had been preceded by his cavalry at a distance of half a day's march, he would have been acquainted with the gravity of the situation on the evening of the 3d.

If the troops camped at Seltz had in the same way reconnoitered to a distance of twenty kilometres, and, finally, if their reconnaissance had been executed with the boldness and vigor traditional with our cavalry, it is beyond doubt that Marshal Mac-Mahon and General Ducrot would have made the dispositions required by the circumstances of the situation.

The first cause of this repulse was then *the insufficiency of reconnaissance service upon the frontier.*

It is to this want of information that we must attribute the other tactical errors, such as the dispersion of the forces.

This combat, moreover, has disclosed other imperfections:

1st. During the action, two regiments, the 78th and 96th (over 4,000 men), had remained assembled at Climbach, eight kilometres from Wissembourg, awaiting under arms the order to move forward; but this order was not given.

With the Prussians, notwithstanding the disproportion between the troops engaged, it is probable that this force would have hastened to the scene of conflict without orders.

2d. The 2d Division, in taking its positions, on the evening of the 3d, was not placed so as to guard the passages of the Lauter, the probable aim of its movement.

These unfortunate positions had been previously prescribed to it, and its chief had no authority to post it elsewhere.

And yet, as the Prussians have observed, it was not possible to defend the approaches to Wissembourg without occupying the passage at Altenstadt, which permitted the place to be turned from the east.

3d. The disproportion of our artillery and the general inferiority of this arm in presence of the Prussian artillery, indicated with what difficulty it would thenceforth prepare for the attacks of our infantry.

4th. It may be said that there was generally on our part a false impression regarding the German forces, their number, their military education, their intrinsic value as troops, and the resources at their disposal.

5th. Lastly, when possessed of proper information, we did not seem able to discern the scope of the enemy's assemblements and the aim of his movements. Even the attack upon the frontier had escaped our notice, up to the moment when it burst upon us with full intensity.

The instruction most clearly presented by the combat of Wissembourg is that henceforth it will be impossible for a force, whatever be its strength, to properly establish itself upon a position without information of what is going on at least a day's march to the front.

To sum up, insufficiency of reconnaissance service, lack of proper proportion of field guns, deficiency in their power, and want of experience concerning the conditions of modern war—such were the defects which this unhappy event disclosed.

But, regarding the attack of frontiers, it suggests other reflections. The III. Army had profited by the numerical weakness of our forces in Alsace to effect its concentration within a short day's march of our territory. Then, as soon as ready, it was thrown forward.

Its attack of the frontier was an exceptional case. The Germans well understood the inferiority of their adversaries in point of effectives ; their leaders had only to assemble an imposing mass and set it in motion.

In the future, circumstances so favorable will rarely present themselves, and in order to understand the proper character of a frontier attack in modern times, we must revert to the events which were happening upon the Sarre at the same instant.

V.—Attack of the Sarre Frontier in 1870.

1st.—March of the II. German Army in 1870, from its Zone of Concentration toward the Frontier.

It was on 29th July, 1870, that the Prussians began to gather from the situation the first information casting doubt upon our offensive. Then, sensible that the II. Army was cramped in its cantonments upon the right bank of the Rhine, it was resolved to move some of the corps to the front.

This army represented to us then the centre of a group of armies which, assembled within six marches of the frontier, was about to move upon it, while holding itself in readiness for an encounter with the opposing masses. This is one of the normal conditions of modern war.

On July 29 the II. Army received a telegraphic order from the King to move to the left bank of the Rhine and occupy the line Alsenz-Gölheim-Grünstadt. This line had been reconnoitred, and seemed suitable for defense. It was upon the eastern slope of the Haardt, and controlled the roads traversing this extensive plateau. A defensive position had even been selected at Mannheim. (*See Plate XXIV.*)

The order, moreover, directed two corps, the III. and IV., which were nearly completed, to be moved to this line, the advanced-guards to be sent beyond it, and two other corps, the IX. and XII., to be pushed forward as rapidly as possible, to remove the pressure from the cantonments in rear.

This order was executed; but as information concerning the enemy was the first requisite even for the least important movements, this army was directed to dispatch its two cavalry divisions as soon as practicable along the frontier in the vicinity of the Sarre, and watch this river from Sarrebruck to Bitche. The commander-in-chief of the German armies at the same time gave orders for the IX. Corps to enter the first line. The II. Army was then put in motion, and its commander, in order to cover it in the direction of our forces, indicated with precision to his two cavalry divisions the service they were expected to perform.

He ordered them to move to within a short march of the frontier, that is to say 60 kilometres from the front occupied by the French, to take position there, make continual reconnaissances with detachments ranging in strength from a battalion to a regiment, feel the adversary, and keep in contact with him.

This order was deemed sufficient to determine all the movements of the II. Army, the two leading corps of which were at Fürfeld and Kaiserslautern on the 31st, while the left was in rear upon the Rhine.

On the same day the reconnaissances were begun in accordance with instructions received the evening before.

The 5th and 6th Divisions of Cavalry, under General Rheinbaben, formed three columns, and held the two high roads leading into Lorraine, those from Mayence and Mannheim to Sarrebruck. To the right, two brigades marched by way of Baumholder upon Völklingen. To the left, a brigade marched by Kaiserslautern upon Homburg.

A detached regiment was directed upon Pirmasens to connect the II. and III. Armies.

The strongest column occupied the principal communicating line, that of the Nahe.

Each flank column was to be followed, at a distance

of one short march, by an infantry division charged with supporting it.

On this day, the 31st, the front of exploration of the two cavalry divisions extended from Martinstein to Dürkheim, a distance of 63 kilometres [39 miles].

The movement continued during the following day, and the front of exploration, which nearly corresponded to the front of march of the II. Army, was reduced to 43 kilometres [about 27 miles].

Reports received at general headquarters went more and more to confirm belief in our defensive attitude. From July 24, moreover, the German generals knew exactly the composition of our army, the number of our effectives, and the positions of our various corps.

Notwithstanding this, the forward march was conducted with the greatest prudence. The Germans were satisfied with extending their detraining stations as far as Baumholder and Kaiserslautern, in the centre of the Palatinate.

On August 2, the exploration front was still further reduced, and did not exceed 35 kilometres. It was pushed but 28 kilometres beyond the front of march. The latter front was very much compressed, and did not exceed 29 kilometres. The cavalry divisions were 31 kilometres distant from our frontier.

Connection was established by this army with the I. Army near Tholey, and with the III. by the arrival of the left detachment at Pirmasens.

It held its front upon a line of defense, the Lauter, a tributary of the Nahe, and was on the point of entering the long defiles of the wooded zone of the Palatinate.

The commander-in-chief was still imperfectly informed of our intentions; he believed that the situation called for the exercise of continual caution, and issued his orders accordingly.

In case there was any indication of an offensive move-

ment upon the part of the enemy, the II. Army was, on the 2d and 3d, to hold itself upon the line Offenbach-Kaiserslautern.

In the contrary case, it was to make a short march of 15 or 16 kilometres, and await the closing up of all the corps to within half a day's march.

This was a species of concentration, with a view to be prepared for a possible forward movement on the part of the enemy; and although the forces were still 48 kilometres (2 marches) from the frontier, it was considered necessary to prescribe it.

From this time, the proximity of our boundary permitted Prince Frederick Charles to gather daily news concerning our movements, and to govern his dispositions accordingly. We have only to recall these dispositions in order to follow the progress of the II. Army.

The events of 2d August show simply a more marked contact between the French and German outposts.

There was still no manifestation of the offensive on our part.

At the Prussian headquarters, it was concluded from this, that the second part of the plans of the generalissimo could be carried out. It was, therefore, ordered for the next day, that the leading troops occupy a new position in advance, and that the forces on the left close upon the main body.

We see that up to August 3, the situation was still uncertain. The German leaders, notwithstanding their exact acquaintance with our positions, did not discern our plans, and were on the whole inclined to believe in our offensive.

But as the general aim of their movement was to seek our principal army and defeat it, they did not hesitate to push their corps against us, while at the same time adopting all defensive measures required by the situation. Up to this time, therefore, the uncertain and the unknown were still the controlling elements.

The II. Army marched deliberately forward, while accelerating its final debarkments and seeking information concerning the enemy. After 3d August, thanks to its cavalry, the situation became clearer.

The movements made this day gave the following results:

The cavalry extended from Eiweiler to Guichenbach, Homburg, and Einöd, upon an exploration front of 34 kilometres. It was 40 kilometres (2 marches) from the army's front of march, and very near the position prescribed to it, within half a march of the frontier.

The army itself was écheloned upon two lines. In the first were two corps, the III. and IV., their advanced divisions at Konken and Bruckmühlbach. In second line were four corps, the X., XII., IX., and the Guard, at Fürfeld, Alzey, Grünstadt, and Kaiserslautern respectively. During its march the 6th Division of Cavalry had received information of the combat of August 2 at Sarrebruck.

The measures determined upon as a result of this information, are worthy of being recalled. It seemed to indicate an offensive demonstration on our part upon Völklingen, Sarrebruck, and Sarreguemines. Afterwards the retreat of our columns proved that this demonstration had been without results. The staff of the 6th Division might have looked upon this movement as without particular importance, and have continued the march without giving itself further concern; but it took a wider view of the matter, concluding that this information was useless, except so far as it taught the expediency of procuring still further information, and that to this end it was necessary to reach the forces that we had displayed, with the utmost speed, and by all disposable roads.

In consequence, this division from Klein-Ottweiler upon the Neunkirchen-Homburg line, dispatched a

squadron upon each of the four principal roads leading to the frontier, whose duty was to keep in contact with us, reconnoitre our forces, and study our movements.

In the meantime, the commander of the II. Army was apprised of the combat at Sarrebruck by a telegram from the generalissimo. This engagement and our demonstrations at Sarreguemines and Völklingen, were considered as indicating our intention to take the offensive.

But while combinations were prepared in accordance with this hypothesis, the squadrons sent upon reconnoitring duty reached the frontier and attacked our patrols. Their first reports, transmitted at once to headquarters, set the facts of the case in their proper light, and served to correct the first impression. These squadrons, in pushing forward, discovered that we everywhere fell back when approached. They even took prisoners, from whom valuable information was obtained.

Definite conclusions could be drawn from all these collected facts: the country was clear as far as the Sarre and the Blies, but strongly occupied beyond. In the evening a telegram from the generalissimo confirmed this judgment. He was of the opinion that the II. Army would be able to deploy beyond the wooded zone of Kaiserslautern. He no longer feared an attack on our part. But as it was necessary to provide for every contingency, he ordered the I. Army to be held in readiness to protect the right of the II. Army during its deployment, and the latter to occupy in case of necessity a defensive position behind the Lauter, faced to the west. In this situation the two forces would have been formed on an angular front; and if the French army had attacked, it would have been compromised.

The generalissimo at the same time announced that the III. Army would the next day attack the frontier upon the left, and stated that in all probability it would

be possible to take a general offensive within a very short period. The first impression produced by the combat of Sarrebruck had then been corrected by the reconnaissances of the cavalry, and by the intelligence which came from all points of the exploration front: *the enemy's columns are retiring.* It was this rectification of ideas, which, joined to the forward state of the German strategic deployment, led to the resolution of the next day to take the offensive and to make the first passage of the frontier. On this day, August 3, the II. Army's front of march did not exceed 28 kilometres. It would then have been sufficiently concentrated to fight had not some of the corps of its second échelon been beyond a day's march in rear. Moreover, the infantry divisions marching at the head of the column were now more than a day's march distant from the cavalry divisions which they were to support; however, an order from the generalissimo was soon to diminish this depth.

One peculiarity is worthy of notice: in consequence of closing up the front of march, the right reconnoiting column now covered the front of the I. Army; its squadrons had traversed the zone of the latter's cantonments. As a result there was a mixing of the units of the two armies, and the beginning of a conflict of authority between their commanders. In order to adjust the difficulty, Von Moltke prescribed with precision the line which was to separate the zones of march of these armies. It would seem to result from this, that a demarcation of zones is indispensable in every such case.

The movements executed on August 4 emphasized the offensive attitude which the II. Army had resolved to take from the day when it became acquainted with our situation.

The front of march covered only 24 kilometres, but the depth was still great. The dispositions were nearly the same as those of the evening before, but the cavalry

had reached the points prescribed for it half a march from the frontier. Soon it would be able to undertake reconnaissances upon a grand scale, cover the systems of roads leading toward the adversary, penetrate, thanks to our inaction, to within reach of our forces, and even strike our communications.

It is then especially after the 4th of August that the reconnaissance service of the 5th and 6th Cavalry Divisions merits an attentive following. The left wing, the Bredow Brigade, was at Zweibrücken, two kilometres distant from our frontier. It sent forward nearly one-half of its effectives,—five detachments, each of several squadrons,—which penetrated our frontier between Sarreguemines and Bitche, pushed on 15 kilometres, witnessed the retirement of all our outposts, and thus viewed our camps at Rohrbach and Bitche. It was the information transmitted upon this subject to the leaders of the Prussian armies which led them on the following day to give the order to keep us active on this side, in order to prevent the arrival of reinforcements in Alsace, and which caused our 5th Corps to remain in position during the fatal action of August 6th.

Upon the exploration front and upon the right wing, the reports were simply confirmatory of those of the evening before. But they possessed the advantage of having been gathered, so to speak, in the midst of our positions.

A German reconnaissance was, indeed, pushed as far as Emmersweiler, three kilometres from Forbach, and more than eight kilometres in rear of the positions then occupied by General Frossard, at Sarrebruck. The first impression of the officer commanding it was one of astonishment; he could with difficulty understand how he had been able to penetrate to our encampments without having been perceived. From the point where he stood, he saw one of our columns, followed by a bag-

gage convoy, moving from the frontier in the direction of Rosbruck.

This information, added to that obtained by the left wing and the centre, necessarily induced the belief that we were in retreat.

The reports of the Prussian squadrons expressed moreover a kind of amazement at the inertness of our cavalry, and already betrayed the excess of confidence with which this attitude inspired them.

It was the sum of all these reports that definitely fixed the idea at general headquarters of the defensive character of our projects.

After this, the Prussian plans were formed with greater clearness.

The III. Army having entered into action on the left wing, the opinion at headquarters was that the result of this army's movement should be known before further matters were decided on.

If favorable, the I. and II. Armies were to advance to the Sarre; the III. Army was then to join them and cover their left flank.

Thus the group of armies would always be concentrated. But it was now clear that the II. Army could, without fear of attack, emerge from the wooded defiles of Kaiserslautern, and deploy beyond; and orders were given accordingly.

Their aim was to make a partial deployment of the II. Army on the 7th of August, as it issued from the defiles, so as to permit it at once to continue its march toward the frontier and to be in readiness to give battle. By this deployment four corps were to be placed in the first line upon the four roads leading from the Neunkirchen-Zweibrücken line to the Sarre and the Blies, namely:

Neunkirchen to Sarrebruck;

Homburg to St. Jean, *viâ* St. Ingbert;

Homburg to Sarreguemines;

Einöd to Rohrbach.

Two other corps, the IX. and X., were to form the second échelon, and to serve as general reserves.

The II. Army would thus have had on the evening of the 7th:

The III. Corps at Neunkirchen, with an advanced-guard at Sulzbach, ten kilometres in front.

The X. Corps at Bexbach, with an advanced-guard at St. Ingbert, thirteen kilometres distant; the Guard at Homburg.

The IV. Corps at Zweibrücken, 1,800 metres from the line of the frontier, with an advanced-guard upon this line itself.

The IX. and XII. Corps at Waldmohr and Mühlbach.

Thus at the moment the II. Army arrived within the distance of a march from the frontier, the generalissimo concentrated it for action. The front of march was now only sixteen kilometres, the dimension of a line of battle; and the depth was reduced to ten kilometres, scarcely half a march.

The advanced-guards were moved as near to the frontier as possible. One of them was even pushed to this line itself; the others were, on an average, within half a day's march.

The commander-in-chief was desirous that the invasion should be made by all the heads of columns at the same time.

The front of the outposts did not exceed 28 kilometres. Finally, the army, as we have said, held the four roads which were to form its line of operations.

These dispositions should then be looked upon as suitable ones to adopt for the purpose of crossing a frontier, when it is known that the enemy's forces are immediately beyond, and when ignorance prevails regarding his intentions.

They may be epitomized thus:

To concentrate the army within half a day's march of the frontier, its corps upon two lines, with strong advanced-guards in front; the lines near enough together to permit the second to take part in the action; the cavalry upon the frontier itself, pushing its squadrons as far as possible in order to gather information.

The execution of this order was destined to receive only a beginning.

Events, which some are pleased to attribute to chance, but which, in reality, were but the logical consequences of the dispositions made by the opposing armies, were to deeply alter the situation.

However, during the 5th of August, the II. Army conformed as far as possible to the prescribed measures, and by the evening of this day had already modified its dispositions.

It formed then three échelons of two corps each, at about one march apart. To attain the formation ordered, the head of the army, which was already very near our territory, was to make but a short march.

On this day, the 5th, information furnished by the cavalry confirmed the reports of the evening before regarding our retrograde movement. But the general staff, not finding the intelligence precise enough, ordered the two divisions on reconnoitering service, *to hold themselves in direct contact with our army, to take prisoners, and to more closely observe our retreat.*

Upon the right of the German line an incident occurred, which was a characteristic result of the general method of carrying on the operations. In consequence of the entanglements in the cantonments, the I. Army received orders to incline to the right. But its chief, fearing to be deprived of the honor of giving the first blows, had cleared the ground by pushing his troops upon our frontier. In consequence, one of his corps, the

VII., took measures to move its advanced-guard upon Sarrebruck.

The result was that two corps directed their forces upon the same point of the frontier, without, however, expecting a combat.

While this combination must be accredited in great part to chance, it was also due in some measure to the dispositions for marching and camping prescribed by Von Moltke, in anticipation of the first encounters.

The march of the II. Army from its zone of concentration to points near the frontier terminated on August 5.

On the following day the passage of the frontier and the first attack were to take place. Circumstances not entirely within this army's control were to fasten upon this operation a character of extreme gravity.

If we look at the main elements of these first movements, we see that while no absolute rule can be formulated, valuable precepts may be drawn from them:

The first care of an army, after its strategic deployment, should be to send its cavalry in advance to keep in contact with the enemy and gather exact information regarding his positions, his strength, and his movements.

In its marches toward the frontier, this army should be concentrated and ready for action as soon as possible.

In presence of an enemy whose designs are not yet known, it appears advantagous to adopt *formations in échelon, the army corps moving in concentrated order, less than a day's march apart, occupying the routes of invasion, and the cavalry pushing its reconnaissances as far as the enemy's masses, each division of this army being supported by a division of infantry, which follows it at a distance of half a march*

In order to understand more clearly the bearing of the II. Army's combinations from July 29 to August 5, 1870, they should be compared with those made by us during the same time. It is well then to explain the movements executed on our side.

2ND.—MOVEMENTS OF THE FRENCH ARMY ON THE SARRE IN 1870.

On July 28, 1870, Napoleon III. joined the army at Metz. On this date it was distributed as follows:

1st Corps at Strasburg, Haguenau, and Reichshoffen, with its cavalry at Soultz and Haguenau.

2nd Corps at St. Avold, Forbach, and Bening.

3d Corps at Boulay, Boucheporn, and Bouzonville.

4th Corps at Thionville, Sierck, and Colmen.

5th Corps at Sarreguemines and Bitche.

6th Corps at Châlons, Paris, and Soissons.

7th Corps at Belfort.

The Imperial Guard at Metz.

On the day following his arrival, the Emperor proceeded to St. Avold with the chief-of-staff, in order to examine the progress of our formations.

Could he march forward to take the offensive? Such was the question which presented itself, and which has often been discussed since.

Marshal Lebœuf, the chief-of-staff, believed that it was impossible. The reservists had not yet arrived, and the administrative services were not organized.

These reasons were weighty. But from other points of view, this was the situation:

We had then 210,000 men upon the frontier, 128,700 of them between Metz, Forbach, and Bitche. Of these we could count upon at least 100,000 combatants.

In pushing this mass forward, we would have cleared the ground, found provisions, and, on July 29, have occupied the line of the Sarre with five corps. The Guard would have remained in reserve in rear.

These corps could have been distributed thus:

2nd Corps at Sarrebruck.

3d Corps, three divisions and the cavalry, towards Völklingen.

4th Corps near Kreutzwald, Bouzonville, and Téterchen, prepared to reach the Sarre on the next day.

5th Corps at St. Ingbert and Bliescastel.

Guard, transported by rail to Forbach, or to march to Longeville-les-Saint-Avold.

On the 30th, our army, consequently, would have been established upon the line Dilsbourg-St.-Ingbert-Bliescastel, with three corps in first line and two in rear upon the Sarre—the 4th Corps and the Guard.

The cavalry would have been sent toward Ottweiler and Homburg. Under these conditions, we would have been able, on the 31st, to hold the communications of the Palatinate from Ottweiler to Mühlbach, with our cavalry in advance at Kaiserslautern and Konken.

This movement would at least have prevented the II. German Army from debarking from its trains at Baumholder, delayed the passage of its corps to the left bank of the Rhine, and upon the right bank have thrown obstacles in the way of the proper support of its troops and of its concentration.

On this day, the I. German Army held its VII. Corps at Treves, and its VIII. at Wadern and Hermeskeil. These two corps were yet incomplete; but their position upon the flank of our line of operations would not have allowed us to neglect them; hence the necessity of making the first efforts in their direction. They could have been reached about the 2d of August in the vicinity of Wadern and Losheim, with chances of success.

An advantage gained under these circumstances, would probably have annulled the influence of the I. Army, and given us free control of the left bank of the Rhine.

It has since been revealed that if we had decided to take the offensive on July 29, the II. and III. German Armies would have made their concentration upon the line of the Rhine.

They would undoubtedly have remained there until August 5 and 7, respectively, a delay necessary to com-

plete their organization. Now at this date we, on our side were in condition to act. We would have been reinforced by about 150,000 men. The 1st, 6th, and 7th Corps would have been able to form a second army of 110,000 men, having clear ground to its front as far as Landau, and in position to support the front line.

At all events, in thus taking the initiative of the movements, we would have avoided the defeats of Wissembourg, Frœschwiller, and Spicheren. But it may be said, the troops were not yet in a condition to move forward. This could not surely apply to the men who on the 2d fought at Sarrebruck, and on the 4th at Wissembourg. It is true that the corps were not complete; but on July 28 they had food, munitions, and artillery.

Their general situation will be made clear by the following figures:

The 1st Corps was completed on August 1, with an effective of	40,000 men.
The 2d was nearly completed on July 28, and contained	28,000 men.
The 3d was completed on July 23, and numbered on 28th	34,000 men.
The 4th was completed on July 29, and contained	28,000 men.
The 5th was not completed until August 3, but on July 28 it had	27,000 men.
The 6th was still in rear; but on July 28, it contained	30,000 men.
The 7th was still incomplete on August 6; but on August 1, it contained . . .	24,000 men.
The Guard was ready to march on July 28, and was completed on the 30th, with .	22,000 men.

It would seem then, that a forward movement was possible.

However, the impression produced upon the Emperor

and the chief-of-staff on July 29, was contrary to this idea.

The insufficiency of the administrative services had a decisive influence upon their decision.

Moreover, information concerning the enemy appeared to them too incomplete to warrant the adoption of the offensive. And yet it was quite as exact as the enemy himself possessed regarding us.

We knew, indeed, on July 28, that the VII. and VIII. Corps were concentrating to the north of the Sarre, behind Sarrelouis and Sarrebruck, under orders of General von Steinmetz.

The assemblements of troops belonging to the VIII. Corps at St. Wendel, Ottweiler, Lebach, and Duttweiler, had been discovered.

The presence of a brigade of cavalry at Sarrelouis and Sarrebruck had been made known.

Intelligence was received of the march, between Mayence and Kaiserslautern, of regiments that were to form part of the III., IV., and IX. Corps, to be included in an army to be commanded by Prince Frederick Charles. Finally, we were informed of assemblements in the grand-duchy of Baden and the Palatinate, to form the army of the Crown Prince.

It has been said that all these reports were not known to be exact at this date, and were unverified until two or three days later. Whatever was the state of the case, more precise information was desired regarding the positions of the enemy, and to this end, the cavalry divisions were given the following instructions:

"Impress upon your troops the necessity for habitual watchfulness; accustom them to send out frequent patrols, to make reconnaissances, etc. * * * They will soon have before them an enemy who for a long time has been particularly applying himself in times of peace to guard, outpost, and general protection service relating

to camps, bivouacs, and cantonments. See that all the troops be given theoretical and practical instruction on these subjects." The Marshal renewed his recommendations after the affair of August 2: "Put forward your cavalry; it must take a wide range along the entire line of the Sarre; must not fear to advance in all directions beyond the frontier, observing proper precautions. Let the commanders report to you all intelligence gathered. Keep me well informed."*

The chief-of-staff was at the same time convinced of the necessity of making an advance movement, for the purpose of satisfying public opinion.

He consequently resolved to push the army to the frontier, and close the left wing upon the centre. He informed Marshal Mac-Mahon of the proposed dispositions, adding, "The Emperor has no intention of executing the movement before the end of a week."

On July 30, orders were issued in accordance with this plan. Their result was to bring:

The 2d Corps to Mersbach, Bening, Œting;

The 3d Corps to St. Avold, Boucheporn, etc.;

The 4th Corps to Boulay.

The positions of the 5th Corps and the Guard were unchanged.

In brief, the effect was to close up the front of the army, and gain a little ground in advance. These changes were to have no influence upon the operations. They were accomplished on July 31 and August 1. (*See Plate XXV.*)

At this time the situation had materially changed; the German cavalry had already penetrated to the heart of the Palatinate. In France, the public mind became more and more disturbed. It was necessary to quiet it. To this end, it was decided to attempt an offensive re-

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* *Diary of an Officer of the Army of the Rhine*, by Colonel Fay.

connaissance at Sarrebruck, supporting it by demonstrations upon Sarreguemines and Völklingen. This operation, at first fixed for July 30, was put off until August 2. Its object was "to oblige the enemy to deploy his forces and disclose his plans."

Three corps were put in motion.

The combat of Sarrebruck was the consequence; but it was without influence upon subsequent events.

It is now clear that the measures taken then, August 2, were not in touch with modern methods of warfare, and that in presence of the Prussian mode of disposing their cantonments and marching columns, these efforts could produce no useful result. Cavalry reconnaissances alone were capable of procuring for headquarters the information desired there.

After the combat at Sarrebruck, there were, however, no changes in the positions of our corps. But on the day following this action, news received from Paris added to the perplexity of the situation. It was then determined to order the 4th Corps upon a reconnaissance toward Sarrelouis, while its cavalry division, moved to the region between Bouzonville and Boulay, was not farther than 20 kilometres from that place. Information received at Metz on the night of the 3d had the effect of modifying this project. It was learned that a corps of 40,000 men, designed to act upon the Sarre, had crossed at Tréves; and this at once inducing the belief that an offensive movement against our left flank was intended, a counter order was sent the 4th Corps.

On the following night the uneasiness existing at headquarters was still further increased. All the reports received during the day excited the fear that attacks were to be made from different sides. The agitated thoughts of the commander-in-chief were by turns directed upon Thionville, the *débouchés* at Sarrelouis and Sarrebruck, the defiles of the Vosges, lower Alsace, and the passages of the upper Rhine.

Hence the irresolution which assailed him at a time when the loss of an hour was irreparable. On August 5, however, a conclusion was finally reached. It was inferred that "the affair of Sarrebruck and the daily reconnaissances made by the 4th Corps had decided the enemy on his part to make an offensive movement for the protection of Sarrelouis."

This estimate of the German designs, notwithstanding its strangeness, sprang from the peculiar situation of affairs on our side. In the uncertainty which prevailed regarding the proper steps to be taken, an attack on the part of the enemy under conditions favorable to us was looked upon as desirable.

This is shown by a dispatch sent to General Frossard:

"It is possible that the enemy will soon attack us upon the Sarre. It will be a fortunate thing to have him offer battle with 40,000 men upon a point where we have 70,000 without counting your corps." *

This time of uncertainty was also a period of delay, profitless even to the troops. These, indeed, exhausted themselves in continual reconnaissances, extending three or four kilometres from their encampments, and in movements to and fro, the aim of which escaped them. On the 4th of August, for example, the Guard received orders to proceed from Metz to the Sarre. A counter order was shortly afterwards received, and it was to remain at Metz. But on the 5th it was ordered to march in the direction of Sarrelouis, and occupy Volmerange, 21 kilometres from that place. While on the way, an order was received recalling it to Metz. Immediately afterwards, this order was revoked by another, assigning Courcelles-Chaussy as its station. It was late, and hence this movement was postponed until the following day.

* *Diary of an Officer of the Army of the Rhine*, by Colonel Fay.

During the march a telegram summoned General Bourbaki to proceed to St. Avold; a counter order prevented him from doing so. Finally, at 4:30 P. M., an officer arrived from Metz, renewing the order of the morning. The general, embarrassed, wished to ascertain the judgment of the officer, and asked him the aim of the movement. The latter was not informed; but satisfied that an encounter was taking place upon the Sarre, he so stated to the General, and the Guard at 6 P. M. continued the movement.

On the morning of the preceding day, news of the battle of Wissembourg had reached the Emperor. It suggested to the chief-of-staff the idea of a removal of the 3d and 5th Corps toward the east. Orders for this were immediately given. It was their execution that led the Prussian staffs to suppose a movement of retreat on our part. At all events, it had a consequence which might have enlisted a chance of success in our favor—it was the means of distributing the four divisions of the 3d Corps upon a circular front of 28 kilometres, within only half a day's march of Spicheren.

The 4th Corps, on August 5, occupied the road leading from Boulay to Sarrelouis, and was thus in condition to support the 3d.

On the same day, the 2d Corps, informed of the approach of strong hostile forces, and alarmed at its advanced position, asked authority to withdraw. This was granted; but as we shall see later, the movement could not be effected until night.

Intelligence was received at Metz that the army of Steinmetz was making dispositions for attack, and that the forces of Frederick Charles were between Sarrebruck and Zweibrücken, ready to support it.

This information, joined to the news received from Alsace, decided the Emperor to divide his army into three groups, but for operations only: one upon the

Sarre, under Bazaine; one in Alsace, commanded by Mac-Mahon; and the third at Metz, under his own immediate direction.

These dispositions were unfortunately too late to influence the grave events which were about to happen.

Such were our first movements from July 28 to August 5.

They clearly show forth the defects, so often pointed out—a list too long to review. It will be enough to enumerate the most striking, the recollection of which should never be effaced.

The inactivity of our army at the commencement of the campaign of 1870, must be attributed to the delays in the arrival of the reservists, the imperfection of the administrative services, and the lack of supplies.

The want of decision on the part of the commander, was caused by a deficiency of information regarding the enemy. This resulted from our ignorance of the German military organization, and from the narrow range of our cavalry reconnaissances.

Finally, the dispositions made on the 5th of August, were not conformable to the principle of concentrating the forces before battle. The intelligence received regarding the approach of the enemy's forces, sufficiently indicated, indeed, the necessity for this concentration.

From a tactical point of view, then, two general mistakes appear in these first measures:

The failure of the cavalry divisions to make suitable reconnaissances, and the lack of proper concentration.

The consequences of these dispositions will be seen in the attack now preparing.

3D.—BATTLE OF SPICHEREN, AUGUST 6, 1870.

POSITIONS OF THE I. AND II. GERMAN ARMIES, AUGUST 5.

On the 5th of August, 1870, the day before the passage of the Sarre frontier by the Germans, these two armies of the right occupied the following positions:

I. Army.—Two corps were formed in first line. One of these, the VII., was at Bettingen and Lebach, 20 kilometres from Völklingen, on the Sarre. The 14th Division, at Lebach, had its advanced-guard 4 kilometres to the south; the 13th, at Bettingen, its advanced-guard at Huttersdorf.

The other, the VIII. Corps, had its 16th Division in the vicinity of Steinweiler, 20 kilometres from Sarrebruck. The 15th Division occupied Tholey and Mainzweiler. The I. Corps was more than a day's march in rear, at Birkenfeld, and the cavalry between Tholey and St. Wendel, behind the first échelon.

On the date mentioned, General Steinmetz gave orders to commence the movement on the following day toward the Sarre, and according to his instructions the VIII. Corps was to proceed:

The 13th Division toward Puttlingen, with advanced-guard at Völklingen, 3 kilometres from the front.

The 14th Division, toward Guichenbach, with advanced-guard at Sarrebruck.

II. Army.—This army, on the 5th of August, occupied the following positions:

III. Corps.—The 6th Division at St. Wendel; the 5th at Neunkirchen, 20 kilometres from Sarrebruck.

IV. Corps.—The 8th Division at Zweibrücken, 16 kilometres from Bitche; the 7th at Homburg, 27 kilometres from Sarrebruck.

The X. Corps at Cusel and Altenglan; the Guard in the vicinity of Kaiserslautern.

The IX. Corps at Otterberg, and the *XII.* at Münchweiler.

During this same day, these different corps received orders to assemble on the 6th:

The III. at Neunkirchen, with advanced-guard toward Sarrebruck;

The IV. at Zweibrücken, with advanced-guard at Neu-Hornbach;

The X. at Waldmohr;

The Guard at Homburg;

The IV. Corps at Landstuhl;

The XII. at Kaiserslautern.

The group composed of the first two German armies had then, on August 5, three divisions, the 14th, 16th, and 5th, about 45,000 men, at a distance of 20 kilometres from Sarrebruck; three others, the 13th, 7th, and 8th, at distances varying from 25 to 30 kilometres; while other divisions, the 15th and 6th, followed closely. It was possible then to concentrate four army corps and two divisions of cavalry for action upon the Sarre in a single day. Finally, two of these divisions, forming a mass of about 30,000 men, were marching on the 6th toward the same crossing-point of this river.

POSITIONS OF THE FRENCH ARMY ON THE 5TH OF AUGUST.

On the evening of this day, our army had no thought of defending the frontier. It, however, expected early combats, and had its forces distributed as follows:

2d Corps.—On the morning of the 5th, this corps was in position upon the heights to the south of Sarrebruck; but during the night it moved to the rear. The 3d Division (Laveaucoupet), about 9,400 men, occupied the heights of Spicheren; the 1st Division (Vergé), about 8,000 men, Stiring and Forbach; the 2d (Bataille), about 9,000 men, Oetingen. The headquarters, the cavalry division, and four batteries of reserve artillery, were at Forbach.

There was thus a mass of 29,000 men in position around Spicheren, upon the frontier itself.

The 3d Corps (Bazaine) had:

The 1st Division (Montaudon), about 9,000 men, at Sarreguemines, 12 kilometres from Spicheren;

The 2d (Castagny), about 8,000 men, at Puttelange, 16 kilometres from Spicheren;

The 3d (Metman), about 8,200 men, at Marienthal, also 16 kilometres from Spicheren;

The 4th (Decaen), about 9,500 men, together with headquarters, and the Cavalry Division, at St. Avold, 23 kilometres from Spicheren.

The 4th Corps (Ladmirault) had:

The 1st Division (de Cissey), about 8,000 men, at Bouzonville, 25 kilometres from Völklingen. It was to reach Téterchen on August 6;

The 2d (Grenier), about 8,000 men, at Boulay, at a distance of 27 kilometres from Völklingen;

The 3d (de Lorencez), about 8,700, at Coume, 22 kilometres from Völklingen;

The Cavalry Division and headquarters at Bouzonville and Boulay.

The 2d Division was to move on the 6th to Boucheporn, and the remainder of the corps to Boulay.

Finally, the 5th Corps had two divisions at Bitche, one brigade of its 2d Division at Sarreguemines, the other at Rohrbach, *en route* for Bitche.

In brief, on this day we had 29,000 men upon the frontier near the point where the German troops were to make their attack the next day.

We had in addition three divisions of the 3d Corps (about 25,000 men) half a march distant; and, finally, the strongest division of the 3d Corps (about 9,500 men) scarcely a march away.

We were consequently in condition to concentrate, during the morning of the 6th, nearly 55,000 men upon the approaches to Spicheren, and by evening to increase this number to 64,000.

Such was the general situation. But while the enemy held his cavalry divisions upon our front and in contact with us for several days, ours were kept in rear of the

infantry. The information obtained by the enemy was therefore exact, while ours amounted to almost nothing at all. He knew that we had strong masses between St. Avold and Sarrebruck, others toward Boulay, columns *en route* from Sarreguemines to Bitche, and troops moving to the rear.

On our part, we knew only that the German forces were approaching the Sarre, and especially Sarrebruck.

It was under these conditions that the attack upon the frontier took place.

PRELIMINARIES OF THE ATTACK.

At break of day on the 6th of August, the outposts of one of the cavalry brigades of the II. German Army perceived that the heights to the south of Sarrebruck had been evacuated by our troops. Immediately a cavalry squadron pushed to the front to ascertain their whereabouts and follow their movement. (*See Plate XXVI.*)

It came into collision with two grand-guards of infantry that we had placed at the foot of the heights of Spicheren to the north, then with a squadron and four pieces, between these guards and Stiring-Wendel. It was repulsed, and unable to do more than ascertain that we were apparently making a retrograde march.

Other reconnaissances confirmed this impression, and led the enemy to believe that our army had begun to retreat. He supposed that the detachments which had been encountered in position were charged with covering this movement.

Toward 11 A. M. the commander of the Prussian cavalry divisions transmitted this information to the general-in-chief.

The latter had learned during the same morning of the evacuation of the heights of Sarrebruck. He, therefore, concluded that the passages of the Sarre were clear, and that the first move was to seize them.

The order for this was issued at 8 A. M. Its effect was to change the destinations assigned to the corps of the first line on the evening before.

Thus the III. Corps, instead of concentrating at Neunkirchen, was to reach Sarrebruck and push an advanced-guard toward Forbach.

The IV., in place of remaining at Zweibrücken, was to gain Neu-Hornbach, and move forward its advanced-guards to Rohrbach and Bitche.

The X., instead of stopping at Waldmohr, was to push on to St. Ingbert, thus obliging one of its divisions to make a march of 36 kilometres.

The Guard and the IX. and XII. Corps were to follow the movement and proceed to Assweiler, Bexbach, and Homburg.

While these instructions were being dispatched, the corps and division chiefs of the first line, on their own responsibility, adopted measures having the same effect, according as information reached them regarding our supposed retreat.

These isolated measures and their results are worthy of attention. Thus the commander of the III. Corps, upon learning of our march to the rear, ordered the 5th Division to push on to Sarrebruck.

In the VII. Corps, the chief of the 14th Division, who was marching upon this place, asked authority to seize the heights upon the left bank, as soon as he was informed of their evacuation. The corps commander, although at a distance, left him entirely free in the matter. In consequence, he ordered his advanced-guard to occupy these heights.

This force, in order to reach its objective in presence of the enemy, adopted a march formation very different from that then employed by us, and which was very favorable to the successive development of efforts during the combat. Experience has since proved how great

was the necessity for this tactical disposition, on account of the rapidity of fire and its murderous effects. This formation was as follows:

Advanced-Guard. — The general commanding the 27th Brigade;
One squadron;
One battalion (39th);
One light battery;
Two battalions (39th);
A detachment of litter-bearers;
One company of pioneers with light bridge equipage.

Main Body.—The general commanding the 28th Brigade;
A regiment of infantry;
Three batteries;
Two battalions (53d);
A battalion detached to support the artillery;
A regiment of infantry (77th);
Baggage and trains.

This, in fact, was the entire 14th Infantry Division, about 15,000 men, which was marching upon Sarrebruck.

The advanced-guard crossed the Sarre, and deployed to the south of Sarrebruck, between ten and eleven o'clock.

At the same moment the commander of the advanced-guard of the 5th Division (III. Corps) wishing to reconnoitre the ground, also arrived at Sarrebruck. He examined our positions and saw French columns debouching from the direction of Stiring. From this he concluded that the 14th Division would not, perhaps, be strong enough. He then notified his colleague of his presence, ordered his brigade to hasten its march, and dispatched reports of the situation to his superiors.

In the preliminaries to this attack, we thus find the German generals putting into practice two principles of grand tactics with which they appeared profoundly impressed, and which, according to their own expression, they have knit into the flesh and bone; namely:

1*st. When the enemy retreats, he must be immediately pursued.*

2*d. When one force sees another engaged, it should put itself in condition to support it with the greatest possible energy, and without waiting for orders.*

It is certain, indeed, that with increase in the masses and extension of combat fronts, these principles were a safeguard against defeat, and a powerful element of success.

The initiative taken thus, on August 6, by the different Prussian generals, resulted in putting in motion toward the field of action all the troops that, even by forced marches and by rail, could reach there before 8 P. M.

PRELIMINARIES OF THE DEFENSE.

The ground taken by our 2d Corps was less a combat position than an outpost line. It commanded the ground to the right, and was in turn dominated by that to the left. Upon both flanks were thick woods not occupied by us, which permitted the enemy to turn the line.

The combat front was divided into two parts by wooded and abrupt declivities practicable for infantry only, called the forest of Spicheren, extending between the town of this name and Stiring. An advanced point, Éperon [the Spur], celebrated on account of the struggle there, formed a salient upon this front. It was a good post of observation, too narrow, however, to permit the deployment of a large force, and easily turned if its flanks were not strongly occupied.

Upon the heights, the woods prevented the develop-

ment of the fire from the side of Sarrebruck. In order to command the ground in advance, it was necessary to occupy the borders of these woods. On the plain to the left, there was a field of fire of only about 1800 metres front.

The enemy, on the contrary, found upon debouching from Sarrebruck a space large enough to permit easy deployment, shelter to prepare his attacks, and good positions for artillery, from which to direct converging fires upon us.

A vigorous attack upon our flanks must then place the 2d Corps in a critical situation. Two circumstances were to make its inferiority still more striking: the efficiency of the German artillery, and the lack of tactical instruction on the part of our infantry in the proper methods of occupying and defending woods.

Since one o'clock on the morning of the 6th our troops were distributed as follows upon the Stiring-Spicheren position:

3d Division (Laveaucoupet), formed in two lines upon the plateau of Spicheren:

First line: Micheler Brigade, to the north of the village, with two infantry grand-guards, one at the foot of the Spur, the other in advance of Gifert-Wald.

Second line: Doëns Brigade, with artillery, to the south of the village.

1st Division (Vergé):

Jolivet Brigade at Stiring: 76th Regiment, Colonel Brice, to the east of the road; 77th, Colonel Février, to the west.

Valazé Brigade, at Forbach, a kilometre and a half in rear.

2d Division (Bataille), at Oetingen, 5 kilometres in rear, watching the roads from Sarrelouis.

The remainder of the corps at Forbach.

Attack and Defense of the Position.—At daybreak, Lieut. Colonel Billot, chief-of-staff of the 3d Division, concerned over the situation of affairs, moved to the front of the position, with Commandant Parmentier of the Engineers. Upon their arrival at the Spur, the Prussian squadron was arrested by our grand-guards, and by the fire from four pieces of artillery which General Jolivet had placed in position near Stiring.

At this time the battle began for our troops, feebly at first, afterwards becoming very spirited. For the Germans, who had taken the initiative of the attack, this on the contrary was but an outpost engagement.

General Von Rheinbaben moved beyond Sarrebruck to personally ascertain the condition of affairs. He was accompanied by five squadrons.

The fire of our outposts now became sharper, and our main forces took their positions for action. Shelter trenches were dug upon the Spur, and the 10th battalion of chasseurs was posted there, together with engineer troops and two guns.

Between 10 and 11 o'clock, the advanced-guard of the 14th Prussian Division moved toward the heights to the south of Sarrebruck, designated under the names Drill-Ground Hill, Reppertsberg, Nussberg, and Winterberg. Another hill, the Galgenberg, was between Reppertsberg and the Spur.

Upon the appearance of the Prussian sharpshooters the action seemed to take on a definite shape; General Laveaucoupet had no thought however except to act upon the defensive.

It had not been decided by the French to give battle, in the sense understood by the Prussians. The struggle now beginning was to be marked at the outset by a first period of engagements, during which the 14th Prussian Division was to be arrested and then driven back. A decisive period, characterized by the pushing forward of

the enemy's supporting troops to the line of battle, was to follow this and lead to the retreat of our 2d Corps.

Each of these periods offers two distinct fields of action: one upon the plateau of Spicheren, the other near Stiring on the plain.

First Period.—At the outset the Germans placed but one battery in position. This was sufficient to overpower our two pieces at the Spur and the four pieces on the plain. But soon all the artillery of the 14th Division entered the action, distributed into two groups, which were placed at the extremities of the position, in order to bring a cross fire to bear upon the defenders of the Spur and our pieces on the plain.

Since the entrance of the 14th Division upon the scene the action was directed by its chief. The Spur appeared to him the decisive point, and he at once began to prepare the way for its attack by the fire of artillery; then, when the proper moment seemed to arrive, he ordered the assault.

The infantry attempted a double turning movement, the forces taking advantage of all shelter afforded by the ground. But it was only on the side of the Gifert-Wald and the woods of Saint Arnual that the German soldiers were able to reach the plateau.

Our troops of the first line received timely reinforcement, and the enemy was repulsed.

In this attack the fire was most intense. Our generals were obliged to constantly expose themselves, and it was necessary to call the entire Doëns Brigade into action.

The German troops were thrown back in disorder upon Winterberg.

To the left, on the plain, the combat was not less spirited. Upon the appearance of the Prussian sharpshooters the Jolivet Brigade opened fire while extending toward Schöneck. The enemy gained the woods in

front and to the west, but his first attempt was too weak to succeed. Soon the arrival of the bulk of the Prussian Division rapidly increased the violence of the fire. Our guns were silenced and forced to retire. The enemy had a numerical superiority on this side. General Jolivet then asked for reinforcements from Forbach. The arrival of a regiment re-established the balance of affairs, and the position was maintained with advantage.

The combat in this way kept up until 3 P. M. To state the matter in brief, the Prussian attack had been attempted with 15,000 men, against 13,400, increased toward 2 o'clock to about 16,000. It had been prepared in the centre by 24 pieces of artillery, to which at first responded 12 pieces (afterwards 18 pieces) and 6 mitrailleuses. The attempts of the German infantry were made only under cover of the woods, whereas our troops fought in the open to the north of Spicheren and the factories of Stiring. On the right and left wings our soldiers maintained the struggle in the woods, but not without a certain hesitation.

Under these circumstances, notwithstanding the marked advantage which their superiority in artillery gave the Germans, we resisted successfully, but no one thought of taking the offensive; for this it was felt that fresh troops were required, and we had none.

It is to be observed that the Prussian general understood perfectly the bearing of his movement, while on our side only one thing was known: that the adversary after having attacked had received reinforcements and had finally been checked.

Beyond the field of battle occurred incidents which interested the conflict too directly to be passed over unnoticed.

The commander of the 2d Corps believed up to 2 o'clock that the action was simply an affair of outposts. Consequently he had not personally visited the field, and

had asked no assistance of the 3d Corps except support for his wings. But at 2 o'clock he notified the commander of the latter that the action in progress was a real battle, without, however, insisting upon the forwarding of reinforcements. Further, up to the middle of the day, the neighboring divisions awaited orders and did not move.

2d Period.—Issue of the Attack.—The Germans have in these terms summed up the conditions of the action at 3 P. M.: "The situation on the side of the Prussians rendered it urgently necessary that fresh troops enter the line in aid of the 14th Division, in the unequal struggle which it had maintained up to that moment upon a front of nearly six kilometres. It was in constant danger of seeing the enemy profit by his numerical superiority to push back or break the weak line of battle which it opposed to him."

Now our front hardly exceeded from 3 to 4 kilometres, and if the Prussian front was more extended, it arose from the development incident to the turning movements. At all events, the supports which were thought so necessary were not slow in arriving.

Toward 3 o'clock, General Von Goeben, commanding the VIII. Prussian Corps, proceeded to Sarrebruck, arriving just ahead of the advanced-guard of the 16th Division. He immediately assumed the direction of affairs, examined the ground, and decided that in order to carry the Spur it was necessary first of all to occupy the heights of Gifert-Wald, which permitted it to be outflanked to the east.

While he was thus deliberating, the generals commanding the 5th Prussian Division and the III. Corps reached the field with the first forces they were able to lead thither.

The reinforcements were principally in batteries,

which had the immediate effect of redoubling the intensity of fire.

Upon the plateau, the Laveaucoupet Division had already called the whole of its reserve into action, and our troops were fatigued. In a short time, the enemy seeing our pieces on the Spur almost reduced to silence, made a direct attack upon this point at the same moment that fresh troops penetrated the Gifert-Wald. This new effort made against weakened regiments succeeded. The Spur was carried, and the enemy established himself upon this point, after a murderous assault which cost the life of one of his generals. Our troops withdrew for a few hundred yards only, and continued the struggle. Before the Gifert-Wald we still held the Prussians in check, although with much difficulty, when, fortunately, unexpected succor re-animated the courage of our men.

General Bataille, hearing the cannon, and toward the middle of the day appreciating the gravity of the situation, sent the Bastoul Brigade to General Laveaucoupet, and accompanied the other to Stiring, where the Vergé Division had now its four regiments together. The co-operation of this brigade arrested the enemy, and appeared for the instant to dash his enthusiasm. There was a lull in the action. General Frossard, informed of this, reported that he believed the combat had ended for the day, but would be renewed during the night or on the morrow.

Upon the plateau, however, the illusion was of short duration, for new columns were directed upon our right. These were the 16th and 5th Prussian Divisions, under General Von Zastrow, commanding the VII. Corps. The latter, in his turn, had assumed control at about 5 o'clock, by reason of seniority.

The arrival of these assailants brought on a bloody struggle upon our right, in which General Doëns and several of our field officers heroically gave up their

lives. Our troops, animated by their leaders, made an energetic resistance, and the Prussians were not able to get beyond Gifert-Wald and the Spur. Their generals then determined to turn the plateau toward the west, thus separating our two groups at Stiring and Spicheren.

Their constantly increasing artillery soon forced us to evacuate three houses at the foot of the plateau, between the heights and Stiring. The German sharpshooters established themselves there, and wasted no time in outflanking the left of the position upon the plateau. The artillery, able then to gain the Spur, rendered our position critical. However, owing to a change of front executed by Colonel Zentz under fire, our troops could face both north and west, and prevent all further advance of the enemy until nightfall. The latter on his part seemed exhausted.

On the left, the action was not less destructive. Upon the arrival of the Prussian reinforcements, our soldiers recoiled for an instant; but the support of the first brigade of the Bataille Division, commanded by Colonel Haca, communicated new vigor to them, and gave a more favorable turn to the situation. Up to 6 P. M., the attempts of the enemy were without effect. Unfortunately our troops began to show signs of exhaustion. The arrival of a regiment of the 5th Division permitted the Prussians to extend their line into the woods to the west, where they outflanked our left and were able to bring a rear fire to bear upon the defenders of the factory. Our soldiers formed then a crochet on this side, and the combat went on with renewed intensity.

Things were in this state when General Frossard arrived. He at once took in the gravity of the situation, and perceived that without strong reinforcements we would no longer be able to maintain the contest. The intended succor sent him by the 3d Corps consisted only of the brigade of dragoons under General Juniac, which

soon became an encumbrance. At nightfall, we were obliged to give up Alt-Stiringen, then the woods to the north of the factory, the woods to the west, and even one or two houses in the village.

The situation on this side had already become serious, when suddenly the sound of cannon was heard in our rear, in the direction of Forbach. It was the artillery of the 13th Prussian Division, which had been sent in this direction after having crossed the Sarre at Völklingen. It fell upon a feeble detachment of dragoons, and upon a party of reservists that had reached Forbach only that afternoon—forces forming the sole garrison of this place. Fortunately the energy displayed by these troops deceived the enemy, who dared not pass the Kanichenberg, nor enter Forbach, which he believed strongly occupied.

But at Stiring, the troops thought themselves turned by the south. Then General Frossard, no longer hoping for succor, and fearing a disaster, gave orders for a retreat upon Sarreguemines, assigning to General Bataille the duty of covering the movement.

At the very outset of the retreat, the enemy threw himself upon the village, and a bloody struggle ensued in the factory buildings. This continued far into the night, by the lurid light of burning houses, and amidst the crash of falling timbers.

Our retreat was then effected, in conformity with the order of General Frossard, and the exhausted enemy attempted no pursuit.

Results of the Battle.—The contest was over. The losses in killed, wounded, and missing, officers included, reached 4,871 men on the part of the Prussians, and 4,078 with us.

The proportion of field officers killed and wounded on our side, far exceeded that of the enemy. They were

obliged, indeed, to freely expose themselves in order to sustain and encourage their exhausted troops.

We had, in the beginning, about 13,400 men against 16,000 of the enemy. But the latter, reinforced by fresh troops which after 3 o'clock were continually arriving, numbered upon the field, at the end of the action, 45,000 men and 108 guns.

The estimate in *rationnaires* gives a force of 50,000, while we had but 29,000 men and 72 pieces, 18 of which were mitrailleuses.

As to the results of this action, they were of great importance.

First of all, the frontier had been forced.

Then the entire western slope of the Vosges, with all its railroads and ordinary, roads had fallen into the hands of the enemy, and likewise the important supplies assembled at Sarreguemines and Forbach.

From a strategic point of view, our army lost the initiative of the movements and its most favorable chance of taking the offensive. Its *projets* of operations were nullified, and thenceforth it must submit to those of the adversary.

Respecting the *morale*, confidence was shaken in our ranks, and stimulated in the lines of the enemy.

Finally, the invasion had begun.

Comments.—From a tactical point of view, the success of the Prussians was due to the following considerations:

1st. *The dispatch by them to the field of battle by forced marches*, and in every other possible way, of all troops found within reach;

2nd. *Attentive and judicious study of the situation* before engaging their troops;

3d. *Thorough preparation by their artillery for the attacks;*

4th. *Marked superiority of this arm* with them, in number, range, and accuracy;

5th. *Use of natural shelter by their infantry in advancing;* skill in utilizing it, especially when fighting in woods;

6th. *Employment by them of flanking movements upon the wings*, while the front appeared to be occupied only by artillery;

7th. Finally, *lack of similar dispositions on our part*, notwithstanding the devotion, energy, and courage of our troops.

To complete these comparisons, let us suppose, for an instant, that the principles put in practice by the Prussians on August 6, 1870, had also been applied by us, and that we had everywhere acted with the same initiative and the same energy as they.

Here would probably have been the course of events:

By 8 A. M., the commander of the 2d Corps would have been upon the plateau of Spicheren.

At 10:30 the Valazé Brigade would have been at Stiring.

The Bataille Division, having 5 kilometres to make, would not have been able to arrive before 11:30.

The right wing being covered on the side of Sarreguemines, the cavalry would have been sent toward Völklingen upon the left, in the valley of the Rosselle.

Consequently, during the first few hours of the contest, we would have had a marked superiority, even in artillery. Therefore, it is permissible to conclude, in view of the vigor of the action, that the attacks upon the Spur, Gifert-Wald, and Stiringer-Wald, would have been checked.

It is not probable, however, that the commander of the 2d Corps would have asked assistance; he might even perhaps have reported that he counted upon a success. Hence without reinforcements he was still exposed to defeat in the evening.

But if our troops had been trained as the Prussians

were, to march in the direction of cannonading, without waiting for orders, we would have seen quite different movements, which would undoubtedly have been a guaranty against this result.

First of all, the Metman, Castagny, and Montaudon Divisions would have been put into communication with the 2d Corps at daybreak.

Then they would have been informed of the engagement towards 11 o'clock. They would thus have been dispatched to the scene of action by noon, either on the responsibility of their respective commanders or by the order of the commander of the 3d Corps.

The Metman Division, having 14 kilometres to make, would have reached Stiring at 3:30; the Castagny Division, 16 kilometres from Spicheren, would have arrived upon the plateau at 4 o'clock; and lastly, the Montaudon Division, 12 kilometres distant, would have reached Spicheren at 3 o'clock.

The commander of the 3d Corps, then commander-in-chief of the 2d, 3d, and 4th Corps, notified at St. Avold at 10:30, would have arrived by rail at noon, and at once have taken direction of affairs, imparting thus a new impulse to the troops.

At 4 P. M. we would therefore have had in line 55,000 men, 108 guns, and 36 mitrailleuses.

As the Prussians have since admitted, it is probable that success would have crowned our efforts.

We should then understand that the custom of hastening to the battlefield, even without orders, is essentially practical. Under Napoleon it was the rule. The Germans have adopted it, and other armies should do likewise. It is certain, moreover, that its application cannot in any case lead to unfavorable results, while upon the field of action, upon the decisive point, it is a guaranty of success.

The large masses designed to act together to-day, the

deep formations for march, the dispersed and extended orders of combat, the necessity imposed upon armies of picking their way when crossing the frontier, the distances separating the combatants, and the difficulties preventing the generals-in-chief from finding out the strength of the enemy's position—on account of all these we are forced to admit the truth of the following principles:

1st. *The obligation imposed upon each unit to be constantly in communication with the neighboring units;*

2d. *The obligation resing upon each unit to always inform the neighboring units of the combats in which it is engaging;*

3d. *The obligation to march in the direction of cannonading with the greatest possible speed.*

In reality, on August 6, 1870, the Sarre frontier was crossed as a result of the general offensive movement, and an unexpected battle fought without the direction or participation of the chiefs of the two armies engaged. The hypothesis of a retreat by our army was incorrect; for this name did not apply to the displacement of a part of the 2d Corps. The combat, on the side of the Prussians, was conducted by three generals, who had succeeded to the command in the order of their arrival upon the scene, these changes producing no effect upon the course of the battle. Apparently both this affair and its results seemed due to chance. But when we examine things at the bottom, we perceive that events were brought about in the regular way; that the battle was the consequence of the dispositions made by the two adversaries, and that it was in accordance with the ordinary conditions of modern war. The prominent fact is that these conditions were understood by the Germans and ignored by us.

From this it must be concluded that the method of tactical instruction, the dispositions for the march, the

combat tactics, the initiative, the activity, and the ardor noticed in the ranks of our enemy are conditions which will henceforth be inseparable from hostile manœuvres and encounters. These are the elements of success which should be sought on every hand.

Finally, if our cavalry had been as well practiced in reconnaissance service as were the German squadrons, it is certain that our army would have received timely notice of the march of the enemy's columns upon our frontier. The situation then demanded that we should make dispositions similar to those of the adversary in his first marches in August.

We should not, consequently, have remained on the extreme limit of the frontier upon positions exposing our flanks. We should have concentrated the largest possible forces in a good defensive position, chosen in advance, and so organized that both artillery and infantry fire could have developed their maximum effectiveness. This is the identical measure recommended by General Frossard in 1868. Finally, it is not certain that, in profiting by the tendency of the enemy to throw himself headlong upon the troops which he believed in retreat, it might not have been possible to draw him into an unfavorable position.

Generally, we may conclude from the preceding facts, that the attack and defense of frontiers will henceforth require a most vigilant reconnaissance service, a practice of taking the initative through all the different degrees of the command, and the adoption of concentrated formations such as are prescribed on the eve of battle.

Are there more precise rules applicable to this first act in modern campaigns? Evidently not.

It is made clear by the lessons of history that chance plays a larger part in this period than in any other, on account of the uncertainty prevailing with reference to the enemy's positions and plans, and that in this case

the measures taken must be governed by circumstances as they arise.

But it is not at all doubtful that, from the beginning of the assemblements, provision must be made for the first combats. It is necessary then to think of approaching the enemy in force, upon advantageous ground, and especially with resistless energy, and an unfaltering determination to conquer. To give effect to this, the forces should be disposed with a view to making a supreme effort—the attack of the opposing forces, with all disposable troops, with the greatest possible vigor, with an ardor and a tenacity which have but one object, victory.

§ 5.—STRATEGIC MARCHES.

I.—Definition of Marches.

Strategic marches are those undertaken by armies either for the purpose of moving from their bases of concentration to a first objective, or from one objective to another.

Under this title are also included the movements executed between the zones of concentration and the enemy's frontier. But, as has already been said, these first operations borrow from the present conditions of war a special character, which requires separate study. It remains now to consider strategic marches from a general standpoint.

Their importance has no need of being demonstrated: they are the operations which conduct armies to decisive battles. Consequently, the enemy is met with more or less advantage, according as the directions of these marches and the dispositions of the troops at the time are favorable or the reverse. Their influence upon the results of a campaign is considerable; and it may be said that, after combats themselves, they are the most important operations of war.

One cannot, therefore, examine them too thoroughly, nor investigate with too much care the principles governing their execution.

These principles have undergone few changes since the commencement of the century. This explains how Von Moltke, in his combinations of 1866 and 1870, often seemed inspired by the rules in force during the wars of the Republic and the Empire. For us, this glorious epoch still offers the most complete instructions in this regard. It is then to it that we must turn when desirous of giving the subject a serious and practical consideration. In studying afterwards the more recent campaigns in which these same principles have been applied, in examining the results following their observance, and those arising from their neglect, we shall be almost certain of having presented to our minds the salient features of war, viewed with reference to marches.

We have seen that, upon the offensive, an army should, after its concentration, move resolutely forward, cross the frontier, seek the enemy's principal force, attack it wherever found, defeat it, and drive it back.

But what will be its task on the day following its first combat? Should it pursue? Should it march upon the capital or a large neighboring city? What direction should it give its columns? The unknown looms before it, and the ordinary problem of war, the search for information, imposes itself anew. Often contact with the enemy will be lost, and in order to give direction to his plans the general-in-chief puts to himself a question which he is thenceforth obliged daily to repeat: *Where is the enemy?*

This answered, he reverts to the general aim of the war, which is the destruction of the adversary, and with this object before him marches upon the latter anew.

After Spicheren, although the Prussian cavalry had not lost contact upon the Sarre as it had in the Vosges,

the intelligence which it furnished was not precise enough to enable the generalissimo to form his plans. It was not until August 9 that he came to a decision. His order for the march was issued at once. It commenced with these words:

"The information gathered leads to the conclusion that the enemy has retired behind the Moselle, or at least behind the Seille."

"The three German armies will follow this movement," etc.

This order shows us that in every march of an army or group of armies, it is necessary at first to determine the objective, and then to fix upon the line of march. In a study of these operations, from a strategic standpoint, it will be proper to proceed in the same order.

II.—March Objectives and Directions.

Nearly all the wars in the commencement of the century gave rise to well-combined marches. Among the most remarkable are those of 1805 and 1806. They are so well known that a brief reference to them here will be sufficient.

1st.—Campaign of 1805.—At the beginning of this campaign the army on the Channel was directed upon the Rhine, while the corps stationed in Holland and Hanover were put in motion toward the Main. The resulting celebrated marches were true marches of concentration, which, however, no longer correspond to the conditions of modern war. They were accomplished under extremely favorable circumstances, which, we should bear in mind, are not to be met with to-day. We may then neglect them and pass to those which followed.

As soon as war was resolved upon, Napoleon's first thought was to ascertain the position of the enemy's

forces. When he learned that the Russians were still in Moravia, while the Austrians had moved to the Iller, the aim of his future marches became well defined. The enemy had made the mistake of dividing his forces, and this was to be turned to advantage. With this in view, Napoleon endeavored first of all to keep up the separation of the two masses, then to seize the communications of the nearer force without uncovering his own. The direction to be given his columns was thus indicated. The march objectives answering to these combinations were to be the points of passage of the Danube by which the armies of his two antagonists mutually communicated, and at which the Austrian line of retreat could be directly threatened. These points were Günzburg, Ingolstadt, Neuburg, Donauwerth, and Ratisbon. Thence ensued those wonderful strategic marches which bore the grand army to the Danube below Ulm, and which enabled it some days later to execute a series of manœuvres upon the rear of the enemy, leading to his capitulation.

Campaign of 1806.—The aim of Napoleon was here the same as in the preceding year. He wished to cut the enemy's line of communications. He must consequently reach the left wing which covered them, and, if successful in outflanking it, the communications would fall into his power.

It was then this left, and the points Jena, Naumburg, Leipsic, upon which it rested, that were to serve as objectives, and to indicate the directions to be taken.

Thence followed the strategic march in three columns, directed at first upon Plauen, Schleiz, and Saalfeld, and afterwards upon Jena. Then came the celebrated battle of this name, in which our troops fought upon the enemy's lines of retreat—a combination leading to decisive results, which form an integral part of history.

Let us now enter into the details of one of these campaigns of the First Empire, in which the selection of march objectives not only assured success, but also contributed to retrieve the errors committed.

2d.—Campaign of 1807.—After the battle of Eylau, Napoleon, in order to cover the siege of Dantzic and repair his army, went into cantonment upon the Passarge.

Benningsen, the commander-in-chief of the Russian army, proceeded to take post at Heilsberg upon the Alle. He protected this town by field works, and made it a place of temporary importance, which he hoped to utilize soon as a point of support in his manœuvres. But, in taking this position, the Russian general had uncovered his magazines left at Kœnigsberg, while his natural line of retreat lay through Gumbinnen. Moreover, he was separated from the Prussian corps under General Lestocq, which formed his right and was charged with covering Koenigsberg. (*See Plate XXVII.*)

The French army was cantoned in three lines. The 6th Corps, under Ney, established upon an advanced point at Gutstadt, covered its front. Benningsen, tempted by this isolated position, took the offensive in the beginning of June, hoping to cut the 6th Corps from the remainder of the army, and destroy it. Ney, who had but 17,000 men against 60,000, resisted his attacks, gave time for the nearest troops in rear to come to his assistance, and retired fighting step by step to Deppen upon the Passarge.

Napoleon was at Finkenstein. Upon learning of these events he at first concentrated his army between Osterode and Deppen, upon a front of about 20 kilometres. Then, seeing at once the importance of Koenigsberg and the double mistake of the Russians in uncovering their magazines and in separating from the Prussians, he resolved to move directly between the positions Heilsberg

and Koenigsberg, taking for march objectives the points connecting these two cities. But first of all, it was necessary to move upon the enemy—the immediate objective.

On the 8th of June, profiting by the state of inaction into which the Russians had fallen in consequence of Ney's vigorous resistance, he took the offensive.

Thus before commencing operations, Napoleon at first determined the objective with precision and the directions to be taken by his columns, and then assumed the initiative.

He ordered the 1st Corps (Victor) forming the left wing upon the lower Passarge, to drive back the Prussians under Lestocq, by extending toward Mehlsack, and to throw them upon Koenigsberg.

The Emperor himself took the corps of Soult (4th), Ney (6th), Lannes (Reserve Corps), and the Guard, with the intention of falling upon Benningsen. Finally he directed Davout and Mortier (3d and 8th Corps), who formed the centre, to move in échelon toward Eylau, in order to outflank the Russians from the side of Koenigsberg.

The right, commanded by him in person, struck the Russian rear-guard at Glottau on the 9th of June, drove it back, and took Gutstadt. The Russian army, thus repulsed, retired upon Heilsberg by the right bank of the Alle, while the French army followed it by the left bank.

On the 10th, seeing the Russians in position at Heilsberg, Napoleon resolved to attack them, while his left corps endeavored to advance upon their communications.

In consequence, the 1st Corps received orders to march upon Koenigsberg by Landsberg; Davout and Mortier were to follow Victor's movement by the left bank of the Alle, and cut the communications from Heilsberg to Koenigsberg.

With the corps which remained to him, the Emperor attacked the Russian positions. Unfortunately our troops, fatigued and inferior in numbers, did not succeed in dislodging the enemy, who subjected them to serious loss. This indecisive combat was regarded as a repulse, and Napoleon himself expected to see the engagement renewed on the following day; but the direction of his other columns was the means of retrieving this lack of success, and led to the fall of the defenses of Heilsberg.

Davout on the evening before had arrived at Grossendorf, upon the road from Heilsberg to Landsberg. On the morning of the 11th he marched upon Eylau, only 14 kilometres distant. Ney and Mortier followed him upon the Grossendorf road. Lannes with the Reserve Corps occupied a point between Heilsberg and Landsberg, and closed the road between these places on the evening of the 10th.

Benningsen, seeing himself cut from his communications, and fearful for the fate of Koenigsberg, decided to evacuate Heilsberg on the morning of the 11th, by the right bank of the Alle. He descended the valley toward Bartenstein and Schippenbeil, hoping yet to gain Koenigsberg by crossing at these points, or further north, either at Friedland or Wehlau.

Napoleon moved the imperial headquarters to Heilsberg on the evening of the 11th, for the purpose of asserting his success by the occupation of this place, and on the 12th proceeded to Eylau.

Once at this point, and master of the country between the Alle and the sea, he directed Davout and Murat in échelon upon Koenigsberg, and then concentrated near Eylau the corps immediately under his eye, in order to be prepared to march rapidly either upon Friedland or Wehlau. Learning then that the enemy had retired from Bartenstein, and moved northward, he ordered

Lannes to march upon Friedland with the Reserve Corps, informing him that Grouchy's cavalry would be at his disposal, and that Mortier was at Domnau, ready to support him. Lannes' instructions were to prevent the enemy from proceeding beyond Friedland. The remainder of the army was assembled near Eylau and Domnau, prepared to concert in a general action.

For the purpose of obeying the pressing order which the Emperor of Russia had sent him, to save Koenigsberg at any price, Benningsen, after having precipitately evacuated Heilsberg, Bartenstein, and Schippenbeil, directed an advanced-guard upon Friedland, by forced marches. It reached this place on the evening of the 13th, a regiment of Lannes' advanced-guard having already occupied it for some hours. This force, too weak to resist the efforts of the Russians, was obliged to give up the place and retire to the left bank of the Alle, where the enemy at once followed and established himself.

On the following day, the 14th of June, the anniversary of Marengo, the Emperor won the victory of Friedland, the way for which had been so well prepared by his skillful marches. The Russians were beaten, with a river in their rear, into which great numbers were precipitated. In the rout which followed, they hastened to gain the crossing of the Pregel at Wehlau, and hurriedly retired behind the Niemen. Koenigsberg, evacuated by the Prussians, was occupied by our troops on the 16th.

The peace of Tilsit followed quickly these brilliant successes, and assured the army a well-earned repose.

Comments.—One of the characteristics of this campaign is the influence exercised by the direction of the marches; it is this which led to the actions and assured success, even when the issue of the combats did not appear favorable. On the side of the Russians, the mistake

committed in uncovering their line of supply seemed to be the primary cause of defeat. This error was at once perceived by their formidable adversary, who, in consequence, immediately decided upon the march objective. This was sufficient to lead to the decisive results stated, even though one battle had been lost.

The choice of march directions in this campaign was skillfully combined with the disposition in échelon which permits the different corps to support each other, while depriving the enemy of the means of discovering the aim of their movements and the designs of the commander. It thus also largely contributed to success, and should be pointed out as one of the practical methods of executing strategic marches.

General de Ségur has set forth the plan of the Emperor and the defective movements of Benningsen in the following terms:

"Two principal points had engaged the attention of the Emperor: Heilsberg, an entrenched camp of the Russians, and Koenigsberg, their grand magazine. It is said that wishing to imitate his Jena manœuvre, that is to say, daring to uncover his line of operations in order to throw himself upon Benningsen's left, he had at first thought of outflanking the latter on this side, and of thus forcing him back toward Koenigsberg while anticipating him at Wehlau, which would have left this army, cut from its base, with only the sea as a retreat. The truth is he had been forestalled by Benningsen, and hence his troops were not in a favorable situation to attempt this manœuvre; and either this fact or prudence decided him to approach in front at Heilsberg, with more than 100,000 men, while pushing 50,000 upon Eylau, between this camp and Koenigsberg, to thus force the Russians to abandon to him both their intrenched position and their magazine, without battle; after which, going in pursuit, he calculated upon reach-

ing and defeating them at the crossings of the Pregel or the Niemen.

"On June 10, a sanguinary combat was fought at Heilsberg, without result. This aggressive operation appeared not only rash but ill-timed, since the manœuvre of our left wing towards Eylau was to drive Benningsen from his redoubts. Success alone could excuse it; the actual result condemned it; we were repulsed with a loss of 7,000 killed and wounded.

"But Benningsen's faulty position was unchanged. His resources were at Koenigsberg; this was the subject of his most earnest thought; it was moreover, a point of honor with him to hold this place—the last capital of his ally. Everything then urged him toward this grand magazine, situated on the sea upon his right, much as he might have wished the depot, according to the usual rule, upon his line of retreat in rear. Napoleon profited by his opponent's mistake. Abandoning Heilsberg, he moved toward our left wing at Eylau, where he at the same time separated Benningsen from Koenigsberg and threatened the retreat of the Russian army at Friedland and Wehlau.

"Benningsen, alarmed, covered his force by the Alle, and moving down this stream, thought only of retiring in all haste beyond Friedland. But once there, seeing his communications with his sovereign assured, and finding himself reinforced by 28,000 men, instead of moving beyond this town and establishing his army behind the Pregel, the spectre of Koenigsberg began to torment him anew, and not being able to abandon the idea of relieving this place, he stopped, recrossed the Alle at Friedland, and decided to attack. This was on the 14th of June. Surprised by Napoleon in the very act, and with a defile in his rear, he experienced a defeat which put an end to the war."*

Memoirs of de Ségur, vol. iii., pp. 176, 177, and 178.

Conclusions.—The remarkable operations of 1807 show us:

1st. That in general an army's march direction should be so chosen as to lead to the enemy's communications, and that this becomes a positive rule when the adversary himself uncovers these lines.

2d. That one means of facilitating this manœuvre is to dispose the grand units in échelon, and to take advantage of the combats that arrest the enemy, to outflank him on the side which it is desired to threaten.

The application of these principles is not affected by the changes of time; in all epochs they have led to decisive results, and among the warriors who have put them into practice with the greatest success, we cannot forbear mentioning the Austrian field-marshal, Radetsky.

In this connection, his campaign of 1849, in Lombardy, offers us a remarkable example.

3d.—**Campaign of 1849 in Lombardy.**—In March of this year, the Sardinian army having declared the armistice with Austria at an end, and placing too much confidence in rumors of the retreat of the Austrian army, was extended along the Ticino ready to invade the Milanese. It comprised 6 divisions and 2 brigades, distributed as follows:

The Solardi brigade at Oleggio, on the extreme left;

The Perronne division at Galliate;

The division of the Duke of Genoa opposite Buffalora;

The division of the Duke of Savoy at Novara;

The Bès division at Vigevano;

The Durando division at Mortara;

The Romarino division before Pavia, guarding the branch of the Ticino called Gravellona and the bridge of Mezzano-Corte, upon the Po. (*See Plate XXVIII.*)

The Sardinian army was made up of 118 battalions, 47 squadrons, and 156 pieces, and numbered about 100,000 men.

The Austrian army comprised only 72 battalions, 44 squadrons, and 229 pieces: in all 70,000 men. Notwithstanding its numerical inferiority, however, its chief, Marshal Radetsky, resolved to take the offensive, and to move upon the enemy's communications. The two armies being very near together and parallel, it was difficult for one of them to march upon the other's rear without exposing one of its own flanks to attack and uncovering its line of retreat. In order, therefore, to carry out his plan, Radetsky feigned to fall back upon the Quadrilateral, and made a false retreat from Milan upon Lodi, taking care to secure the bridge of San Angelo upon the Lambro. Reaching Lodi, he changed direction, and crossed the Po at Piacenza, where he rallied the detachments called up from the lower Po and from Brescia. He then ascended the right bank until abreast of Pavia, and surprised the four battalions which General Ramorino had charged with guarding the bridges of the Gravellona and of Mezzano-Corte. He next gained the right bank of the Ticino with all his forces except the two brigades left at Buffalora to attract the attention of Charles Albert, and which had orders to rejoin him upon his arrival opposite Berequardo. He then moved up the Ticino, successively beating the Sardinian divisions, and finally winning the famous battle of Novara, which forced Charles Albert to sign his abdication.*

Comments.—By his skill in the choice of objectives, Radetsky was able to take the Sardinians in flank, then to place himself with superior forces astride their line of communications, which, passing through Vercelli, led to Turin. As for himself, in order to avoid compromising and uncovering his line of retreat upon Milan and Lodi, he had taken the precaution to have it pro-

* General Pierron.

tected by the brigades left at Buffalora up to the moment when his movement being far enough advanced, he decided to change it for one through Pavia and Lodi, which assured him a shorter direction.

The manœuvre of Radetsky was then executed with great audacity. It was difficult, but owing to the character of his troops, and his own talent, he secured the most complete results from this combination.

Conclusion.—When an army placed upon a front parallel to that of the enemy desires to move upon the latter's communications, its plan should be to at first attract his attention by means of a demonstration, then to change its own line of communications, and outflank one of his wings.

In our time, with the large masses of which armies are composed, combinations like those made by Radetsky in 1849 are much more difficult to execute. Among recent campaigns, that of the Prussians in 1866 gives us a very correct idea of the difficulties to be encountered in the future in choosing march objectives and directions. For this it will be sufficient to study the movement of their three armies during the days following the battle of Königgrætz.

4th.—March of the Prussian Armies from the Elbe to the Danube in 1866.—After the terrible struggle of the 3d of July in this year, the I. and II. Prussian Armies and the Army of the Elbe passed two entire days without receiving precise information concerning the direction of the enemy's retreat. Contact had been lost, and the Austrian army had slipped away. The Prussians knew only that it had crossed the Elbe at Königgrætz and Josephstadt.

This fact indicated a first aim to the new efforts of the Prussian armies. It was necessary first to seize the pass-

ages of the Elbe, the possession of which cut off the vanquished from all communication with northern Bohemia. (*See Plate XXIX.*)

In consequence, on July 5, the bridges of this river were occupied from Pardubitz to Kladrub; then, being in ignorance of the whereabouts of the enemy, the Prussians took steps necessary to provide for the case of his continuing in the vicinity, their troops remaining in close cantonment upon a space 23 miles square.

July 6.—On this day the victors discovered with certainty that the principal Austrian mass had retired upon Olmütz, and that a weaker force, composed of the 10th Corps and the cavalry divisions, was moving upon Vienna.

On other grounds it was concluded at the general headquarters that Austria would undoubtedly recall to Vienna all available troops then in Italy. The Prussians were therefore constrained to move the bulk of their forces in the direction of the Austrian capital, for the purpose of keeping the enemy's two groups separated. To gain this city before the arrival of the forces from Italy would perhaps bring the war to a speedy close.

These considerations led the King of Prussia to adopt a measure always more or less hazardous. He divided his forces into two groups. The II. Army, forming the left wing, was to follow the beaten army to Olmütz; the remainder was to march direct upon Vienna, and seek to end the campaign with as little delay as possible.

Orders were issued to this effect. It was then the enemy's assemblements that indicated the objective and the line of march. This movement had, moreover, a special aim, which was soon to call for the exercise of the greatest skill on the part of the commander-in-chief —the keeping asunder of the adversary's two forces.

July 7.—On this day, in consequence of decisions reached the evening before, the principal lines of march were assigned to each army.

The II. had only general directions; it was to follow the beaten army, and once at Olmütz, was to take a position toward Littau-Konitz, covering Silesia.

The I. Army was to move from Chrodim to Policka and Neustadt, by the roads from Skuc and Kreutzberg. The Army of the Elbe was to follow the road from Iglau by Deutsch-Brod. These two armies took at first the direction of Brünn, and bore toward the south-east, across the mountainous region separating Moravia from Bohemia.

July 8.—The first march objectives, Policka, Neustadt, and Deutsch-Brod, were reached on this day, and new orders prolonged the march in the same direction.

The I. Army was to move upon Brünn by Policka, Kunstadt, and Kreutzberg-Rosinka. The Army of the Elbe was to march upon Iglau, and thence to Brünn or Znaim, according to circumstances.

July 9, 10, and 11 —The movement continued on the 9th without incident; but on the 10th, the cavalry of the II. Army found Benedek's order of movement in a post-office among other papers. It was thus learned that the Austrian leader had reached Olmütz after a very rapid march, 44½ kilometres in advance of the I. Corps, which was at the head of the II. Army.

On the third day, July 11, the I. Army arrived within a single march of Brünn, and the advanced-guard of the Army of the Elbe entered Iglau.

A change then took place in the general situation. This, when it became known to the Prussians, led to a shifting of their line of march.

The Austrian government had resolved to concentrate the greater part of the Army of the North at Vienna. Benedek had already given the necessary instructions to his generals. One of his corps was to remain at Olmütz, in order to cover this place, and to screen the movement from Prussian scouts. On the evening of the 11th,

the transfer of troops toward Vienna began. The 3d Corps was moved first, and the Saxon Corps was to follow. The March railroad was given up to their use; while along the roads running through the valley of the river of this name, and by the towns of Goeding and Malaczka, another portion of the army was moved toward Vienna, protected by cavalry on the right bank.

On this day, the 11th, information was received at the Prussian headquarters from the II. Army, that these forces were leaving Olmütz. This was sufficient to explain the Austrian combination, and led to an immediate change in the orders previously given.

The II. Army was informed that it was no longer to protect Silesia, but that it would concur with the other two armies in keeping up the separation of the enemy's masses. The King did not hesitate. He decided that this army, instead of placing itself between Littau and Konitz, should be established upon the line Prossnitz-Urtschitz, and that it should take the country to the south of Olmütz for its march direction, instead of the region to the north.

In order to properly define this new objective, instructions were sent from the general headquarters in the following terms: "If this position can be occupied in time, all communication between the Army of the North and Vienna, by the right bank of the March, will be interrupted; and if Prerau can be occupied or the works there destroyed, this army will be prevented from using the railroad."

Upon receipt of these new orders, the II. Army caused its heads of columns to move by the right flank. These soon came upon obstacles of the ground which obliged four corps to proceed upon the same road. This necessitated very short marches, and it was not until the 15th that the prescribed position was reached.

In the meantime, the movement of the I. Army and the Army of the Elbe continued.

On the evening of the 11th, information was received at the general headquarters, through the cavalry, that Brünn was occupied only by weak detachments. This was an important objective; it was expedient to seize it at once, and reach the country beyond. In consequence, Von Moltke sent the following instructions to the commanders-in-chief:

"From information received, it appears probable that we shall find Brünn feebly guarded. Consequently the commander-in-chief of the I. Army will judge on the spot whether in order to become master of this place he should concentrate his army on this side, and how far this concentration should be pushed, or whether it would not be more advantageous for the I. Army to take the Eibenschütz road, in order to facilitate and hasten its own deployment and that of the Army of the Elbe, in in rear of the Thaya, a river to the south of Brünn, upon the line Znaim-Muschau.

"The commander-in.chief of the I. Army will at once communicate his decision in this regard to the commander-in-chief of the Army of the Elbe, and the latter should either continue his movement upon Brünn by Stannern and Trebitsh with one part of his forces, and by Meseritsch with the other; or, in case he finds there is no necessity for a concentration before Brünn, then to march all his forces upon Znaim."

This order shows the degree of initiative which it is proper to leave the army leaders in such a case. It is to be remarked that it did not reach the commander of the Army of the Elbe until the afternoon of July 13, two days after its dispatch. In the interval, in consequence of previous instructions, a mixed division, pushed beyond Brünn, had already gained the points Markvatitz and Horry with its advanced-guard.

July 12.—On this day the advanced-guard of the I. Army occupied Brünn without resistance.

July 13.—The King reached this city. The ground being clear, a still further movement could be made in advance, and accordingly an entire corps was immediately directed toward the south, while the Army of the Elbe was moved upon Znaim. The latter was thus to form an advanced échelon, according to the disposition usually adopted by Von Moltke for the march of a group of armies. Under these circumstances, if one of the group should be attacked, the others could immediately support it, and take the enemy in flank by a simple wheel. This is the angular formation applied to armies on the march.

The Army of the Elbe had anticipated the intentions of the generalissimo, and pushed its heads of columns beyond Brünn, according as the shattered Austrian corps evacuated the ground. Thus, on the same day, the 13th, its advanced-guard reached and occupied Znaim.

Ten days had elapsed since Sadowa. The Army of the Elbe had traveled 185 kilometres. Put in motion on the day following the battle, it had marched continuously for these ten days at the rate of $18\frac{7}{10}$ kilometres [between 11 and 12 miles] a day. This army, it is true, contained only four divisions, and was preceded by an advanced-guard of seven battalions, fourteen squadrons, and fourteen guns, which assured it great mobility.

July 14.—On this day the right group of the Prussian armies had accomplished the first part of its march upon Vienna. Up to this point, nothing had arrested or retarded its movement. But at this moment certain doubts arose in the mind of Von Moltke. Ought this march upon the Austrian capital to be continued, and the line of the Thaya, already reached by the advanced-guard, to be crossed? Or was it preferable to return against the remains of Benedek's forces and crush them?

Which was his true objective? News received of the assemblements at Vienna quickly dispelled all doubt.

"The Austrian government," says the work prepared by the Prussian general staff, "had already assembled its forces around Vienna; and if these moved forward it would probably be necessary to sustain a second battle before terminating the war, and we were at this time more favorably situated, both from a political and military point of view, than would be the case later, if we were obliged to go in search of the enemy. It was a question then of traversing the space between the Thaya and the Danube as quickly as possible, and of preparing means of crossing the latter."

On the 14th, orders were issued accordingly. After a rest of two days, the I. Army was to continue its march upon Vienna by the roads:

Eibenschütz-Laa-Erntsbrünn for the right;

Dürnholz-Ladendorf for the centre;

And Muschau-Nikolsburg-Gaunersdorf, for the left.

Upon the line of the Thaya, to which the advanced-guard of the Army of the Elbe had pushed, and near the March, was a place of great strategic importance. This was Lündenburg, upon the Ferdinand railroad, a junction-point connecting by rail with Brünn, Znaim, Budweiss, Olmütz *viâ* Prerau, and with Presburg and Vienna.

This became then an immediate march objective.

In consequence, the generalissimo ordered the I. Army to form a special detachment for the purpose of seizing it as soon as possible, to intercept, thus, all communication between Vienna and the Army of the North, and to assure the means of utilizing the railroads in the vicinity.

The Army of the Elbe had two roads at its disposal:

The one by Ietzeldorf and Ober-Hollabrünn;

The other by Joslowitz and Entzersdorf-im-Thal.

Marching its main body here, it was to send a detachment in the direction of the Danube above Vienna on the side of Meissau, to make a demonstration toward the bridges of Tulln and Krems.

In order also that the two masses should always be in condition to support each other, the generalissimo fixed the 17th of July as the day of passage of the Thaya at Znaim and Muschau by the heads of columns.

At this time, the two Prussian armies had a front of march of only 39 kilometres [about 24 miles]. Their formation was then as compact as if they expected to encounter the enemy.

On the same day, July 14, the Austrian government began moving the troops in Italy toward the capital, while the Army of the North directed two of its corps, the 2nd and 4th, to Tobitschau and Kojetein.

The latter operation now became difficult, as has been observed in the work of the Prussian staff, several times referred to, since the II. Army was upon the right flank of these forces. If they had been able to take the offensive, their objective would plainly have been this II. Army, and Benedek could not have neglected it without running the risk of having his march arrested. This, indeed, occurred on the following day. It was on July 14 that the scouts of the Crown Prince discovered the Austrian columns in retreat toward Vienna. This information, sent to general headquarters at Brünn in the evening, excited the fear that Benedek had already passed the II. Army, and was now on his way toward Goeding.

This was serious news; it still further modified the situation, and was to exercise an influence upon the march directions.

"The reports received during the night of the 14th," says the account of the Prussian staff, "made it apparent that bodies of troops in considerable numbers had for several days been retreating from Olmütz toward the south."

"It was essential that the I. Army should be directed upon Lündenburg, in order to check the portion of the enemy that had already defiled at Prossnitz, in advance

of the II. Army, and to shut it out both from the Vienna and Presburg roads. It was necessary then, to abandon for the moment the direct march upon Vienna, as prescribed in the order of the evening before, and incline toward the east."

"If now the entire Army of the North, or at least a great part of it, was thus proceeding toward Vienna along the March, a second battle was to be expected."

In anticipation then of meeting the enemy in force, it was advisable to concentrate, and Von Moltke accordingly ordered the II. Army to come to the support of the I., leaving the Vienna road to turn upon Lündenburg, and directed the Army of the Elbe likewise to draw near the I. Army by Laa, moving as far as Wulfersdorf, in order to cover it from any attempt that might be made from the side of Vienna.

The immediate objective of the Prussian armies now became the enemy's lines of communications, and they were about to make an effort to seize them at the point nearest their heads of columns.

July 15.—On the morning of this day the I. Army was put in march toward Muschau and Vienna, leaving one division temporarily in rear at Brünn. All the troops had been set in motion, when the commander-in-chief received the new order of the generalissimo. The question was how best to conform to it when his movement was in full process of execution. Prince Frederick Charles found that it was too late to attempt a change. He contented himself with ordering the two left divisions to incline toward the east, the 7th upon Auspitz, the 8th upon Klobauk. The latter on the following day was to occupy the bridge of Goeding, upon the March; and finally the 5th Division, which had been retained at Brünn, was immediately directed upon Moenitz and Tellnitz, in the vicinity of Austerlitz.

Upon his arrival at Klobauk, on the 15th, the com-

mander of the 8th Division, not wishing to put off the destruction of the railroad until the next day, at once dispatched a detachment of cavalry, 150 strong, and a section of pioneers on this duty. These reached the railroad at 6 P. M. After seeing two train-loads of Austrian troops pass, they hastened to tear up the rails and cut the telegraph line. While thus engaged, a third Austrian train came in sight, but was obliged to retire. This force returned to Klobauk at midnight, having accomplished the work assigned it. It had traveled 96 kilometres [59 miles] during the day.

In the meantime, the Army of the Elbe not having yet received the new orders, still remained at Znaim.

The appearance of the Prussian detachment at Goeding, on the 15th, was co-incident with the discovery further to the north of the second échelon of Benedek's army, by two infantry brigades of the II. Army. This meeting led to the combats of Tobitschau and Rokeinitz, in consequence of which the 1st and 8th Austrian Corps were obliged to bivouac at Prerau, while the first échelon, formed of the 2d and 4th Corps, was at Zdaunec and Kremsier.

The news of the arrival of the Prussians at Goeding apprised Benedek that he was cut from Vienna. He was, in consequence, obliged to abandon the project of following the valley of the March, and to endeavor to reach the Danube by the nearest route to the east, that of the valley of the Waag, leading to Comorn. He hurried his corps then by forced marches across the mountains which separated him from this valley, and again eluded the Prussian scouts.

Upon learning at Vienna of the enemy's arrival at Goeding, orders were given the brigade guarding the bridge of Lündenburg to immediately withdraw. Thenceforth the ground was clear in front of the Prussians from Olmütz to Vienna.

This incident is an example of the extraordinary effect, under such circumstances, attending the unexpected appearance of a weak body of troops boldly commanded, and of the utility of always occupying, without a moment's delay, every point in the theatre of operations which is of strategic interest to an army.

July 16.—The II. Army continued its march toward the east, and reached Prerau.

In the I. Army the 8th Division occupied Goeding, and also Holisch upon the left bank of the March. The 7th Division reached Lündenburg by the left bank of the Thaya, while the advanced-guard of the army gained Eisgrub, by the right bank.

July 17.—The II. Army had lost contact with Benedek, and even all traces of him. He had stolen away by forced marches, and nothing was known except that his army was directed toward the mountains.

This turn of affairs had not been foreseen, but Von Moltke concluded that the disappearance of Benedek toward the east could have but one object—to gain Vienna as soon as possible by another direction. He therefore decided:

1st. To strongly occupy the Lündenburg-Goeding region for the purpose of shutting Benedek from Vienna on this side;

2d. To send a detached corps in the direction of the retreating army;

3d. To move again in force toward the Danube, and cross it near Vienna, thus holding the enemy's two masses asunder in this direction.

The objective and aim of the march remained then always the same. The direction alone changed, and then only temporarily, the heads of columns resuming their march toward the south.

It was, indeed, to this side that the troops were moving during the 17th. The Army of the Elbe, pursuant to its orders of the 15th, arrived at Wulfersdorf.

July 18.—The II. Army, expecting new orders, awaited their arrival before moving. They were received by the Crown Prince at 6 A. M., informing him that the generalissimo having as yet but vague information concerning the enemy, had not been able to definitely fix upon a new objective; but that thenceforth the general objective would be Vienna and Presburg.

In this view, the Army of the Elbe was to follow the route from Brünn to Vienna.

The I. Army was to move upon Vienna by both banks of the March, and prevent the junction of the northern forces with those of the capital.

The II. Army was to support the movement of the other two, leaving one corps to pursue Benedek; and in order to permit this army to rejoin the others, the latter were to make short marches. Finally, in case of encountering the enemy, the Army of the Elbe was to concentrate at Wulfersdorf, and to reinforce its advanced-guard. The I. Army sent a division by forced marches to seize Presburg.

The group to the south composed of the two armies, was to hold the advanced guards abreast of each other for the purpose of permitting the forces to arrive simultaneously upon the important line of the Danube.

The general movement in the new directions began on July 18.

During this time, Benedek, who had not lost an instant, counted upon occupying Presburg on the 22nd with an entire corps, notwithstanding the exhausted condition of his troops.

July 19.—In accordance with the orders of the evening before, the heads of the Prussian columns arrived on the 19th to within two marches of Vienna. At Prussian general headquarters there was no knowledge on the subject of the number of forces which the enemy had moved to the east. The information received by it re-

garding the troops at Vienna indicated an assemblement there of about 150,000 men, furnished by the Army of the South and a reserve army recently created. It was informed, moreover, that important works, capable of sheltering a large army, had been thrown up beyond the bridge of Floridsdorf, to the north of Vienna.

It concluded from this that there was every necessity for the different armies to be on their guard and to remain concentrated. The situation appeared to it of such a character as to justify the dispatch of new instructions to the commanders-in-chief regarding the final aim of the march, the project of crossing the Danube, and the disposition for attack in case of a final battle.

These instructions were as follows :

"The King (generalissimo) intends to concentrate the forces behind the Russ, the Army of the Elbe at Wolkersdorf, the I. Army at Deutsch-Wagram, and the II. Army in reserve at Schoenkirchen.

"Once in this position, the grand army should, first of all, put itself in condition to resist attack, should the enemy attempt to make a sortie from Floridsdorf with all his forces, which amount to about 150,000 men; and in the second place, it ought either to push reconnaissances toward the intrenchments of Floridsdorf and attack them, or march with all possible promptness to the flank upon Presburg, leaving a corps of observation in front of Vienna."

The generalissimo further gave orders to the I. Army to endeavor to seize the Danube bridge at Presburg by surprise;

To the II. Army, to march directly from Nikolsburg to Vienna, and, in order to bring together the largest possible force in case of attack, to endeavor to recall the corps which had been sent after Benedek;

And finally, to the Reserve Corps, then at Prague and Pardubitz, to rejoin him by rail.

Upon the whole, then, such measures were taken at general headquarters as provided for the attack of the lines of Floridsdorf or for the passage of the Danube, according to circumstances.

These dispositions were remarkable from several points of view.

We see that upon receipt of the first news of the enemy's assemblements, Von Moltke thought only of ordering a concentration of his forces.

Then, to provide for the contingency of a second battle, without being influenced by his recent victory or the weakening of the adversary, he endeavored to win all chances of success to his side by assembling the largest possible forces upon the decisive point. His instructions were to result in concentrating upon the line of the Russ the I. and II. Armies, the Army of the Elbe, the Reserve Army, and even isolated detachments which had been charged with special service. There would then have been in the vicinity of Vienna a formidable aggregation of four armies, ready to operate to the same end.

Finally, in order to assure to these masses an unopposed passage of the large river upon which they were arriving, Von Moltke ordered a permanent bridge to be forcibly siezed, choosing a point which intercepted the communications between the enemy's two forces.

He sought, then, under all circumstances to effect a division of these forces, and to keep up their separation. This had been his aim since first crossing the Elbe.

While the Prussian army leaders were making skillful dispositions; while the sovereign was preparing to command in person the decisive battle which he counted upon delivering under the walls of Vienna; while Benedek, on his side, was meeting with success in his attempt to throw sufficient forces into Presburg before the arrival of the Prussians, an armistice signed on July 22, at Nikolsburg, put an end to hostilities.

One incident further, however, signalized this march of the Prussian armies toward the Danube. It is worthy to be cited, less as a consequence of the operation than as a lesson of experience.

The march of the 7th Prussian Division (Fransecky) upon Presburg ended in an encounter at Blumenau with the Austrian troops that had just disembarked from the railroad trains in a state of complete exhaustion. General Fransecky attacked them on the morning of the 22nd. Informed of the armistice at the beginning of the engagement, he yet continued the conflict even beyond the hour fixed for cessation of hostilities, and up to the moment when numerous Austrian truce-bearers, sent from different sides, insisted upon a suspension of the action. He submitted then to a discontinuance of the firing, and renounced thus a new success which seemed assured.

The conclusions to be drawn from this study, from the standpoint of strategic marches, may be briefly stated thus:

The aim of these marches is always to weaken or destroy the enemy.

Their objective should, in consequence, be either a position which separates his forces or threatens his communications.

While keeping these results in view, the direction of the marches should be modified when circumstances require it.

Finally, orders relating to these movements should, so far as possible, be given without hesitation or loss of time.

In this regard, the reconnaissances of cavalry divisions can alone put the leaders in position to act with the necessary decision and promptness.

III.—Errors of Direction in Marches.

If the application of proper principles has often led to important and advantageous results, their neglect, as we know, has also very often drawn armies to their ruin. Regarding the direction of marches, it will not be without interest then to study the campaigns in which this neglect has been flagrant, and to reflect upon the consequences.

1st.—Campaign of 1798 in the Roman States.—It this year the Directory detached from fifteen to sixteen thousand men from the Cisalpine army to act in the Roman States. General Championnet, the commander, had been obliged to spread them out in order to insure subsistence, and also for the purpose of guarding the country. He thus had 4,000 or 5,000 men under General Casabianca in the province of Ancona; 2,000 or 3,000 under General Lemoine, near Terni, upon the western slope of the Apennines; 5,000 under Macdonald, distributed along the Tiber; and a feeble reserve at Rome. (*See Plate XXX.*)

The court of Naples, pressed by the English, was intriguing against us; and seeing the dispersion of our forces, it decided to commence hostilities at the end of November, supplying the place of a declaration of war by an order to General Championnet to evacuate the Papal States. At the same time it put its army in march.

The Neapolitan troops numbered 60,000 men, 20,000 of them distributed in the various strongholds. The remaining 40,000, forming the army of operations, was commanded by the Austrian general Mack, who wished to profit from his numerical superiority to envelop the French.

With this in view, he formed his forces into six columns:

The 1st, operating beyond the Apennines, along the

Adriatic, was to move toward Ancona by the road through Ascoli;

The 2d and 3d, operating upon the slopes of the mountains, were to connect with the preceding, and march, the one upon Terni, the other upon Magliano;

The 4th and strongest column, constituting the principal body, under orders of Mack himself, was to move by Frascati upon Rome;

The 5th was to traverse the Pontine Marshes parallel with the sea;

And, finally, a 6th detachment, embarked in Nelson's fleet, was to land at Leghorn, stir up a revolt in Tuscany, and cut off our retreat.

The French army communicated with upper Italy by three roads leading:

The first, 67 leagues in length, from Rome to Leghorn, by Civita-Vecchia;

The second, 57 leagues, from Rome to Siena, by Viterbo;

The third, 55 leagues, from Rome to Fano, by Borghetto and Terni.

If Mack, profiting by the pronounced salient formed by the Neapolitan frontier in the north, had debouched from Citta-Ducale upon Terni with the bulk of his troops, he would have found himself four marches beyond Rome, in position to threaten our communications with Viterbo; while in marching upon Rome by Frascati with his principal force he reached the frontier at places twenty leagues distant from this capital, and left our communications entirely free, the detachment directed upon Terni being too weak to arouse the least uneasiness.

Championnet, being on the alert, was not slow in learning the directions taken by these different columns. He immediately understood the situation, and abandoned Rome in order to concentrate his army between Civita-Castellana and Citta-Ducale upon his principal line of

retreat, leaving two detachments upon the Ancona and Terni roads for the purpose of observing the enemy's movements. These detachments, soon attacked by Mack's troops, defeated them completely, throwing them back upon their own country.

As to Championnet, he had taken a strong position at Civita Castellana, from which the Neapolitans were not able to dislodge him. Then, seeing them retreat after their futile attack, he resumed the offensive, re-entered Rome, and pursued them into the Neapolitan states, which he resolved to conquer.

But he committed, in his turn, a mistake similar to that made by Mack, dividing his army into four columns, separated by accidents of the ground, which cut off all lateral communications.

The difficulties of the march were still further aggravated by the hostility of the inhabitants.

Nevertheless, thanks to the weakness of his adversaries, Championnet was successful.*

It is not at all doubtful that the repulse experienced by Mack was due to a defective choice of march objectives. Notwithstanding the inferior quality of his troops, he should, with his immense numerical superiority, have been able to attain success.

Although these operations may be considered of secondary importance when we take into account the small number of troops engaged, yet Napoleon thought them worthy of attention from a standpoint of march directions, expressing himself in the following terms:

"The conduct of General Mack would have been good with Austrian troops; for what could he do more than engage his soldiers in a contest with French soldiers when they outnumbered the latter two or three to one? But the Neapolitans were not trained troops, and he

* General Pierron.

should never have employed them in attack, but have taken up such positions as would have obliged the French to become the assailants. Military men are very much divided upon the question of the relative advantage of making or receiving an attack. This question is not at all doubtful, when upon one side are trained veterans having little artillery, and upon the other is a much more numerous force, well supplied with this arm, but with officers and soldiers little inured to war.

"If Mack had been at Citta-Ducale with 40,000 men on the day when hostilities began, had pressed on to Terni that evening, and the next day marched in the direction of Rome, occupying the bridge of Borghetto, and a good position, how would the French have been able with 9,000 men and 12 pieces of artillery to force back an army five times more numerous, having 60 guns, and protected by intrenchments? Yet they would have been obliged to do this in order to open a line of retreat for themselves."

Continuing, the Emperor estimates Championnet's march from Rome to Naples in the following terms:

"It would have been preferable, no doubt, to have refrained from entering the kingdom of Naples, and to have profited from the consternation of the enemy to force a peace, and to detach him, for the time being, from the coalition. But once the decision to march upon Naples was taken, the movement should have been made with rapidity. 30,000 men is, however, the least force with which such an operation should have been undertaken. These should not have been marched along four distinct routes at a distance from each other, separated by mountains and rivers, and in the midst of hostile inhabitants. A corps of 30,000 men should always remain united. This was the strength of the consular army. The Romans always camped this body at night in a space 330 toises [about 700 yards] square.

"Instead then of four lines of operations, there should have been but one—that from Rome to Isola and Capua."*

Conclusion.—The instruction to be drawn from this campaign is similar to that derived from those which precede. When an army has several march directions at its disposal, it should always take that which most directly threatens the enemy's communications. If one of them offers peculiar advantages, and promises to lead to a decisive result with little delay, it should be adopted.

The means of moving upon the adversary's communications, by a judicious choice of march directions, vary according to circumstances, and, in each case, it is for the commander-in-chief to discern those which best respond to the exigencies of the situation.

In 1866, notwithstanding a great numerical superiority, the Italian army was beaten at Custozza, on account of having neglected the principles by which strategic marches should be habitually governed.

2d.—Campaign of 1866 in Italy.—We have before seen, in the study of *projets* of operations, the respective positions of the Italian and Austrian armies in 1866, before the commencement of hostilities; and it has already been said that the Italians had adopted two march directions: one for the army of the King, which, leaving Lombardy, was to move upon Verona; the other for General Cialdini's army, which, starting on the lower Po, was to operate in Friuli.

The movements began toward the middle of June; the 1st, 2d, and 3d Italian Corps moved from Lodi, Cremona, and Piacenza, upon the Chiese, between Lake Garda and

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**Military Correspondence of Napoleon I.*, Vol. X., pp. 206–8–9.

the Po; the 4th Corps advanced toward the lower Po, and took position above Ferrara, with five divisions in first line and three in reserve.

War was declared a few days later, on June 20. The army of the King, three corps strong, advanced from the Chiese upon the Mincio, and extended from Peschiera to Mantua, upon a front of 35 kilometres.

On the 23d the two armies began active operations.

Archduke Albert, in conformity with one of the elementary principles of war, first of all concentrated his forces around Verona. Then, in order to inform himself upon the movements of the enemy, and at the same time conceal his own, he established an active reconnaissance service upon the one hand, and upon the other, instituted a rigorous guard service to insure himself against surprise. He ordered his cavalry to preserve contact with the Italian patrols, to seize prisoners, to make constant reports, and to close the roads leading into Italy. Reduced to the defensive, he determined to give it the most active character possible, and on the 23d crossed the Adige, while the King on his side was passing the Mincio. At this time it was known that Cialdini was stopped on the lower Po by the floods, and that a junction with the army of the King was impossible. The Archduke decided then to take position between Rocca, Zerbare, and Somma-Campagna. (*See Plate XXXI.*)

Thus placed upon the heights on the left bank of the Tione, he could take the King's army in flank and threaten its communications with Valeggio and Goito, if it marched upon Verona. Or if, on the contrary, it sought to move from the side of Mantua, he could take it in rear.

The Archduke would also have been able to establish himself between the King and Cialdini, thus making their separation more complete, and giving him the ad-

vantage of an interior line; but in adopting this plan he would have uncovered his own communications, and run the risk of losing them.

While the Austrian army was making these dispositions, the King, too confident in his numerical superiority, and poorly informed regarding the enemy, whom he believed in a defensive position behind the Adige, crossed the Mincio on the 23d in the following order:

The 1st Corps from Mozembano upon Castelnuovo and Sona;

The 3d from Goito upon Somma-Campagna and Villafranca;

The 2d left two divisions in reserve at Goito, and sent two to Borgoforte to observe Mantua.

These combinations led to the battle of Custozza.

Since we are considering the subject of marches, it would be out of place, perhaps, to examine the details of this action here; but it will be well, however, to stop for an instant to reflect upon the march directions and objectives adopted by both adversaries.

Considerations.—The situation was altogether in favor of the Austrians. The Italians had violated the principle which directs a concentration of forces before the combat. They had left a corps in rear; the army of Cialdini was not within supporting distance; and, on the day of battle, two of their divisions were not yet mobilized; as a consequence, they could bring to the decisive point only six divisions out of seventeen.

The Austrians, on the contrary, had all their forces assembled, and their position upon the heights menaced the flank of the Italian columns as soon as they were set in motion. Their objective was the communications of the enemy, while the latter directed his forces upon their position, which he, however, knew to be very strong.

The consequences of these dispositions could then be seen in advance.

Without stopping to consider them, we may at least inquire what should have been the combinations of the Italian army.

In this connection, two questions present themselves at the outset:

1st. Where were the Austrian communications?

2d. How could they be seized or threatened?

The answer to the first question is simple. The Austrians had two lines of communications: one through Tyrol, the other through Friuli. The first was the longer, the more difficult, and the less abundant in resources. The second was the more important. It led to the heart of Austria. It was this that the Prussians had pointed out as the true march objective. To seize it, then, was the aim of the Italian army.

The objective being determined upon, the march direction naturally resulted from it. It started on the lower Po, and followed the direct route from Verona to Vienna, by way of Vicenza.

In order to give time to cross the Po and to move to the Adige, it was necessary to keep the enemy's forces around Verona. To this end, it became essential to make a demonstration upon the Mincio. For this it would have been sufficient to show heads of columns upon the points of passage, while the corps obliquing to the right could have passed the Po at Guastalla, unobserved by the garrison at Mantua. Once upon the right bank, the Italian army could establish its line of communications upon Bologna or Florence; then, recrossing the Po, in the lower part of its course, it could move rapidly upon Rovigo and Vicenza.*

This operation surely presented difficulties; but it was reasonable, and undertaken with all disposable forces, would have given hope of the most advantageous results.

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* General Pierron.

The project, moreover, was that formed by General Cialdini, and accorded with the combination advised by Von Moltke. But its supporters had to contend against the difference of views which for a long time had existed upon this subject in the Italian army.

The most influential generals, La Marmora and Cialdini, openly expressed antagonistic opinions. Since 1860, their personal views on the subject of a war with Austria had given rise to opposing schools, and were warmly defended by their partisans. The former wished to attack the Quadrilateral by the Mincio, the latter to turn it by the lower Po.

The plan of operations actually adopted seems to have been a compromise between these two opinions.

The following observations show the stage reached in the question at the time war was declared:

"According to some, the principal attack should have been made against the enemy's more important line of communications, extending into Friuli by way of Verona and Vicenza, first of all taking Rovigo, then Padua and the Euganean Hills as objectives. A part of the army should have drawn the enemy through the Polesine by demonstrations either upon the Mincio or between Guastalla and Brescia upon the Po, while the bulk of the army would have crossed the latter river a little below the Valli grandi Veronesi, or more to the right, between Ponte Lagoscuro and Francolinetto. Then Rovigo would have been besieged, and afterwards, according to the movements of the enemy, there would either have been a concentration in the Polesine in order to pass the Adige, or a march upon Padua, coupled with the shutting up of Legnago to the left, at the same time that the fleet occcupied the defenders of Venice to the right."*

The author recurring afterwards to the same subject, expresses the opinion of General Cialdini in these terms:

* Commandant Lemoyne, *Campaign of* 1886 *in Italy*.

"In advancing by the lower Po, Mantua, Legnago, and Peschiera would be taken in rear, and a battle gained near Padua or Vicenza would deprive the Austrians of their principal communication with their country, and oblige them to shut themselves up in Verona, a place more open to attack from the east than the west. . . . . .

"This disagreement between the Italian generals regarding the most advantageous method of conducting a war in Venetia had continued since 1860, when General Fanti, having succeeded General La Marmora in the war ministry, at once discarded the idea of fortifying Cremona and Lonato, and showed a strong disposition to shift the scene of Italian defense to the lower Po.

"The matter, however, was not definitely decided one way or the other, either by General Fanti or his successors.

"The diversity of views held by the two generals who, after the death of Fanti, in 1865, were looked upon as the probable leaders in a war against Austria, could not fail to excite serious attention. At the end of March, 1866, when the mutterings of approaching war were becoming louder and louder, General Pettitti, one of the most distinguished members of the permanent commission of defense, and a personal friend of both generals, sought to harmonize their views."

The combination adopted in 1866 was the result of this step. It was a half measure. It retained, in fact, the direct attack upon the Quadrilateral by the Mincio, while permitting a diversion by the lower Po. The result, being unfavorable, has justified the criticisms to which the dispositions made by the two forces gave rise.

Upon the whole, however, it is perhaps the campaign of 1870, after all, which has revealed the most defective marches. In this regard the march of the Army of Châlons upon Sedan will always be to the French army a

subject for study and regret. It is well then to become acquainted with the causes leading to it, and the influence which it exercised upon the final catastrophe.

3d.—March of the Army of Chalons upon Sedan in 1870.—On the 16th of August Napoleon III. arrived at Châlons from Metz, believing at the time that Bazaine would soon join him with his army. At Châlons he found fresh troops that had assembled in haste, without yet knowing their destination.

The next day he called a conference at the Imperial headquarters, which was attended by the Prince Napoleon, General Berthaut, commander of the *corps mobile* of the Seine, General Trochu, General Schmitz, chief-of-staff of the 12th Corps, then in process of formation, and Marshal MacMahon, who had just arrived.

The results of this consultation were: the nomination of Trochu for governor of Paris; of Mac-Mahon for commander-in-chief of the Army of Châlons; of Bazaine as commander-in-chief of the Imperial armies; and, finally, it was unanimously decided to lead back the Army of Châlons to the walls of Paris.

This decision, dispatched to the Regent by Commandant Duperré, deeply agitated the ministerial council, for it feared the influence of this news upon the people of Paris.

In consequence, General Palikao, Minister of War, sent the following telegram to the Emperor on the evening of the 17th, which had the effect of changing both the march objective and direction:

"The Empress has made me acquainted with the contents of the letter in which the Emperor announces his intention of bringing the Army of Châlons to Paris. I entreat the Emperor to renounce this idea, which has the appearance of abandoning the Army of Metz, at this moment unable to effect its movement upon Verdun.

The Army of Châlons, before three days, will reach 85,000 men, without including Douay's corps, numbering 18,000, which will rejoin within three days. Cannot a strong diversion be made with this army, in view of the fact that the Prussian corps are already exhausted by several battles?"

Such was the first idea of the march upon Sedan. The dispatch suggesting it sprang from the fear of seeing the people of Paris rise in rebellion against the abandonment of the Army of Metz.

The telegram sent by the war minister supposed the Prussian corps exhausted by their combats, which was a gratuitous hypothesis with nothing to justify it. It indicated a diversion as the aim of the Army of Châlons; but this operation was not in accord with the feebleness of our means and the strength of the enemy.

The Emperor at the same time received a dispatch from Bazaine, informing him of the battle of the 18th and the suspension of the movement upon Verdun. This news increased the perplexities of the sovereign and the commander of the Army of Châlons, and the difficulties of the situation continued to multiply during the 18th and 19th; but the idea of retiring upon Paris still strongly prevailed.

On the latter date, a dispatch was received from Bazaine in which he said:

"I am too far from Châlons to indicate to you the operations that should be undertaken. My suggestions would be without value. I consequently leave you free to act as you may think best."

The receipt of this dispatch did not bring MacMahon to a final decision. His army, moreover, was not yet completely reformed, and the remains of the 1st, 5th, and 7th Corps continued to rejoin their commands. During the 20th, however, he was informed that the Uhlans had advanced to within 40 kilometres of his

camp, and this news decided him to move toward Rheims,—a direction which led him nearer to Paris without removing him further from the lower Meuse.

The movement was executed on the 21st, and no difficulties were encountered except those arising from the condition of the roads. But the number of stragglers left in its train bears witness to the weaknesses prevailing in this army, the lack of cohesion among its troops, the commencement of disorganization in its ranks, and finally its inability to march toward the enemy.

After his arrival, MacMahon was called to a second consultation at Courcelles, at which M. Rouher assisted. The latter had been sent from Paris by the government to advise that this army be directed upon Metz; but his wishes came in conflict with the determined will of the Marshal, who had finally decided to move upon Paris.

Notwithstanding contrary views, he resolutely held to his project. He consented, however, to a delay of twenty-four hours, and it was decided that the march to the capital should begin the next day, if in the meantime no new instructions were received from Bazaine.

MacMahon had beyond all doubt the power to act as he pleased; but it would have been difficult for him to have refused assent to a delay requested by one of the most important personages in the country, in the name of the government, and with the assent of the sovereign.

Nevertheless, on the morning of the 22d, the order to move toward Paris was sent to the different corps.

While this was being circulated, the Emperor, at about 9:30 A. M., received Bazaine's report upon the battle of Saint-Privat. It concluded thus:

"I still intend to make my movement toward the north, and afterward change direction by Montmédy to take the route from Sainte-Menehould, if this is not strongly occupied. In case it is, I shall continue upon Sedan, and even Mézières, in order to gain Châlons."

After having seen this report, MacMahon changed his orders and indicated Stenay as the new march direction. It has been said since that he took this step on account of not having received a certain dispatch sent by Bazaine, which ended in these words: "I shall inform you of my march, if I am able to undertake it without compromising the army."

However, unprejudiced researches have established the fact that this second dispatch was received by the Marshal. If it did not lead him to change his last orders and return to his first wish, which was to regain Paris, it was because he did not desire to be charged with having refused to march to Bazaine's relief—a fatal resolve, that was to lead to the catastrophe of Sedan, although none the less dictated by a sense of duty worthy of respect. The misfortune arose from the fact that the direction of Montmédy appeared the best for the fulfillment of this duty, when in reality it was the worst.

The orders to move upon Stenay were dispatched then on the afternoon of the 22d, and the movement began on the 23d.

On the latter date, the respective positions of the two opposing armies were as follows:

The Army of Châlons was upon the Suippe, faced to the north-east, ready to march in the direction of Vouziers, Stenay, and Montmédy. (*See Plate XXXII.*)

The III. Prussian Army and the Army of the Meuse, extended from Sivry-sur-Meuse to Saint-Dizier. Their march directions were upon Paris by Verdun for one army, and by Bar-le-Duc and Vitry for the other.

The determination to move upon Rheims resulted in our following a line parallel to that of the enemy, but in a contrary direction, and at a distance of scarcely 38 kilometres. It was a question then of moving to the flank, and at a distance of only two marches from the

German masses, who held interior lines of operations, while we were extending upon an exterior line. Finally, according as our army advanced, it uncovered its communications with Paris, without threatening the adversary's, which ran through Nancy.

The consequences of taking this direction were not long in making themselves felt.

By the 25th, indeed, parties of the enemy's cavalry were seen at Dammartin-sous-Hans and in the vicinity of Châlons. Our corps, which had reached Vouziers and Attigny, were no longer able to cover themselves to the rear.

On the 26th the German forces, having learned of MacMahon's march, were directed toward the north. Their heads of columns already menaced his right flank in the valley of the Aisne, and his communications at Mourmelon-le-Grand.

On the 27th the roads from Vouziers to Stenay were occupied by the Germans, and the Army of Châlons found itself assailed upon the right flank. On the 28th its lines of retreat upon Rheims and even upon Rethel were cut by the enemy at Vouziers, Voncq, and Attigny. Finally, on the evening of the 31st, the roads from Mézières, along the left bank of the Meuse, were intercepted at Flize, and our unfortunate army found itself in one of those situations where nothing is left but to cut a road through the adversary with the bayonet. Its ruin was certain.

It is needless to recall here the details of those sad events. The march directions alone are in question, and they have given rise to various observations, which have already been made in connection with lines of operations.

It will suffice then to remark that a junction of the Armies of Châlons and Metz was already impossible on August 23, when the movement began, since a victorious

and numerically superior enemy was between them. It was not in this direction, then, that a solution should have been sought.

Perhaps, as has been proposed, it would have been advisable to first of all draw to Paris the two German armies which were headed in that direction, in order then to concentrate new forces toward Épinal, with which to fall upon the enemy's communications and move upon Metz. This combination was no doubt more in conformity with principles, and would at least have avoided a terrible catastrophe.

The following is the view entertained on the subject by the Prussian general staff:

"The surest and simplest solution of the first question was to retire to the vicinity of the capital; then, aided by its defenses and its immense resources, to offer battle under the most favorable conditions possible. Even in the event of a reverse, the French army would have been in condition to promptly escape from pursuit; and as to a rigorous investment or a blockade of Paris, such a measure could not be thought of before the concentration under its walls of a force exceeding 100,000 troops of the line."

Other considerations, moreover, should have exercised a controlling influence upon the measures to be taken. The strength and positions of the Prussian armies were known to those who took part in the conference at Courcelles. Out of the four corps composing the Army of Châlons, which it was thought to oppose to these armies, three were demoralized, and consequently not in condition to undertake long marches or give battle before having re-established tactical coherence and restored confidence. Experience has again and again shown that in such cases neither political nor strategical considerations should be permitted to prevail.

The only proper measure, then, was to march this army to Paris.

IV.—Character of Orders Relating to Marches.

When the march objective and direction have been determined upon, nothing remains but to give the orders for the movement.

Are there in this regard, as in case of the various dispositions heretofore considered, principles which the commanders of armies and their chiefs-of-staff should feel bound to observe? Examples selected from modern campaigns will answer this question.

In this connection, if the true value of the measures adopted by the commander is to be gauged by the successes gained, no epoch offers us more perfect methods than the Napoleonic wars.

1st.—Campaign of 1806.—In the beginning of October of this year, when the grand army was to enter Saxony in three columns, in order to attack the Prussians, Napoleon, through his chief-of-staff, gave the following orders to the two corps under Soult and Ney, composing the right columns:

"WÜRZBURG, October 5, 1806.

"*The Chief of Staff to Marshal Soult.*

"The Emperor orders you, Marshal, to take measures to enter Bayreuth at the earliest possible hour on the 7th. You will enter in force, so that within an hour after the first hussars have reached the place, your entire corps may be there, and during this day, may be able to move several leagues beyond in the direction of Hof. You will continue your march during the 8th, in such a manner as to have your corps upon the heights of Münchberg by night.

"During the 9th, you will move your corps to Hof.

"I acquaint you with the fact that Marshal Ney will

be half a march behind you; and I am giving him orders to keep his cavalry an hour's march in advance, so that it may move to your assistance in case of need.

"These instructions are given under the supposition that you meet no obstacle; but if the enemy be in force at Hof, and Marshal Ney's forces joined to yours be found insufficient to defeat him, you will immediately inform the Emperor, and proceed to take up a good and strong position.

"You need give yourself no concern about the castle of Culmbach. General Wrede, who marches in rear of Marshal Ney's corps, has orders to surround and take it, provided the enemy be not in force at Hof.

"The headquarters will be at Bamberg on the 6th, at Lichtenfels on the 8th, and at Kronach on the 9th.

"You will be careful to dispatch an officer every day to headquarters with an account of your position, and whatever news you may have of the enemy.

"His Majesty relies upon your prudence and military skill to keep his troops from engaging except in cases where you have maturely examined the enemy's position and have all the probabilities of success upon your side.

"General Legrand will proceed to Bayreuth as commander of that entire section. You will recognize him in this capacity.

"His Majesty has no intention of issuing a proclamation; neither are you to issue any; the war was not declared for that; the troops of his Majesty the King of Prussia having entered Saxony and menaced our flanks, the occupation of Bayreuth becomes a necessity in order to support our right. This is then only a defensive position; but you will none the less have the Prussian coat-of-arms removed wherever found, but without scandal or outrage.

"If truce-bearers are sent you from the Prussian

army to know why you have entered the territory of the King of Prussia, you will answer, 'Why have you entered Saxony?' You will say to them that you have orders to commit no act of hostility, but to occupy the whole of the territory of Bayreuth, as a measure necessary to protect our right, which the assemblements of the Prussian army seem to threaten.

"Upon first entering this country, you will issue an order, which, however, shall not be printed, in which you will enjoin good discipline and make other customary recommendations, and in which you will further say that we are marching to occupy the Bayreuth country for the purpose of guarding our right against being turned by the Prussian army, and that wherever the latter opposes himself to you, you rely upon the courage of your troops to bring him to terms.

"His Majesty is assured that the best understanding will exist between yourself and Marshal Ney. Should you be opposed by a force of only 20,000 men, his Majesty yet intends that Ney's corps shall arrive before you attack; not that his Majesty doubts the capability of your troops to overcome an equal or even much larger force, but that by far outnumbering the enemy, blood may be spared and more decisive results obtained.

"His Majesty would have sent you more cavalry, but the Hof country is so cut up that he thinks the force given you, taken with Marshal Ney's, will prove sufficient."*

"WÜRZBURG, October 5, 1806.

The Chief-of-Staff to Marshal Ney.

"Marshal Soult's corps will enter Bayreuth on the 7th, and proceed thence by forced marches upon Hof, in order to attack the enemy there and to advance into

* Taken from *the Historic Archives of the War Bureau.*

Saxony; and as there is but one high-road in the Bayreuth country, his Majesty has thought proper to order you to be at the city of Bayreuth on the 8th, to keep constantly at half a march from Marshal Soult's corps, and to unite with the latter in attacking the enemy in all positions where such concerted action may be necessary.

"When you have entered Saxony, his Majesty will make known to you the part you are to take in that country.

"General Legrand will govern the Bayreuth region. War should not be considered as declared; and your language should be to the effect that the Emperor occupies Bayreuth in order to secure his right wing, menaced by the assemblement of the Prussians and by the invasion of Saxony.

"General Wrede, commanding the Bavarian division, which marches in your rear, has orders to occupy Culmbach.

"The headquarters will be," etc. (See the letter to Marshal Soult.)

Comments.—The order given Soult may be epitomized thus:

1st. Indication of march objectives for three days;

2d. Indication of the bodies which are to follow the same route;

3d. Measures to be adopted in case of encountering the enemy;

4th. Indication of the places at which the general headquarters are to be located;

5th. Special recommendations.

As to the orders sent Ney, they are the consequence and reproduction of the foregoing.

These two documents are distinguished by their precision.

They contain no directions except those pertaining to

the corps in its action as a unit. They prescribe no details relative to the march, the formation of columns, the duties of the divisions or of the cavalry. They leave then the entire matter of the initiative and responsibility to the corps commanders.

The order to Soult was supplemented by instructions sent him the same day direct from the Emperor.

Isntructions to Advance into Saxony; Movements of the Other Corps.

To Marshal Soult.

"WÜRZBURG, October 5, 1806, 11 A. M.

"Cousin, the chief-of-staff is at this moment drawing up your orders, which you will receive during the day. My intention is that you should be at Bayreuth by the 8th.

"I think it well to acquaint you with my projects, to the end that this knowledge may guide you in the presence of important situations.

"I have occupied, armed, and provisioned the works at Würzburg, Forchheim, and Kronach, and I am moving my entire army upon Saxony by three roads. You are at the head of my right column, with Marshal Ney's corps half a march behind you, and 10,000 Bavarians at the same distance from his rear, a total of more than 50,000 men. Marshal Bernadotte leads my second column, and is followed by Marshal Davout's corps, the Guard, and the greater part of the Reserve Cavalry, forming in all a force of over 70,000 men. This column will move by Kronach, Lobenstein, and Schleiz.

"The 5th Corps is at the head of my left column, and behind it is Marshal Augereau's corps. It will march by Coburg, Grafenthal, and Saalfeld. The total strength of this column exceeds 40,000 men.

"On the day of your arrival at Hof, all the other columns will have reached positions abreast of you.

"So far as possible, I shall remain with the central column.

"With this immense superiority of numbers, united upon so narrow a space, you will understand that I need hazard nothing, yet can strike the enemy with a force double his own at whatever points he may make a stand.

* * * * * *

"If the enemy appear against you with less than 30,000 men, you can join your forces to Marshal Ney's, and attack him; but if you find him in a position held for a long time, you will know that he has taken care to fortify himself, and to become well acquainted with his immediate surroundings: in this case, act with prudence.

"Having arrived at Hof, your first care should be to establish the communications between Lobenstein, Ebersdorf, and Schleiz. I shall then be at Ebersdorf.

The information that you receive of the enemy after your advance from Hof, will lead you to incline a little more toward my centre or to take a forward position, in order to be able to march upon Plauen.

"From intelligence received to-day, it appears that if the enemy move, he will direct himself upon my left, since the bulk of his forces seems to be at Erfurt."

The order sent Soult by Berthier, notwithstanding the interest which it possesses, will not be sufficient to give an exact idea of the conduct of marches of the grand units under the First Empire; for this we must examine the orders given by the marshals to their corps.

Here is the one issued by Soult to his division commanders on the afternoon of the 9th, for the march of the following day. The directions cited above had been carried out on the 8th. The corps had marched during the 8th and 9th, and had arrived at Gross-Zöbern, where the headquarters were established. It was marching upon Plauen, in the right wing of the grand army.

"GROSS-ZÖBERT, October 9, 1806.

"To-morrow, the 10th instant, the corps will be directed upon Plauen, where the Marshal commanding will issue further orders relating to its subsequent destination.

"To this end, General Margaron will, by 8:30 A. M., assemble the division of light cavalry, and the battalion of sharpshooters of the Po, which is temporarily detached behind Plauen, and will move a squadron upon the Zwickau high-road, at a distance not to exceed half a league, in order to cover himself while in this position, and another squadron upon the Greitz road, at the same distance.

"General Legrand will move at day-break, also taking the road for Plauen, where, upon his arrival, he will receive further orders.

"General Leval will follow the movement with the 2d Division. He likewise will receive new orders at Plauen. He will see that there is the least possible interval between the divisions, and that his troops march regularly and in close order.

"General Saint-Hilaire will move the 1st Division at 4 A. M., directing it through Gross-Zöbern and Rosenthal upon Plauen, where it will rejoin the corps and receive further orders. General Saint-Hilaire will make the movement in as close order as possible.

"The artillery will closely follow the 1st Division, and its destination will also be Plauen, where new orders will be given it.

"General Saint-Hilaire will leave the 55th regiment behind to cover his movement.

"The headquarters' equipage will leave Hof at 3 A. M., for Plauen. General Saint-Hilaire will kindly furnish a company to act as its guard.

"The commissary will take necessary steps to collect as much bread as possible at Hof, and will distribute the same to the 2nd and 3d Divisions.

"The sick will be sent by Hof to Kronach until further orders.

"The marshal commanding requests the generals to prevent their troops, by the most positive orders, from burning the straw used in their bivouacs when leaving them, so that other columns which are to follow may find their camps and the shelter contrived by them, and that the enemy may not receive the slightest intimation of the movements and intentions of the corps.

"The proclamation which the Emperor addresses to the army is sent to the divisions, and the generals will be careful to see that it is read to the different companies.

"General Margaron will order the squadron of the 16th chasseurs, now at Elnitz, to leave that place to-mor-morrow for Plauen.

"The squadron of the 11th detached at Geffeld and Schleiz, has received separate orders from the marshal commanding."

The essential features of this order may be thus stated:

1st. Indication of the march objective;

2nd. Indication of the exploration service to be performed beyond the front;

3d. March directions and positions in the column of the different parts of the corps; namely, the infantry divisions, the artillery, and the equipage train;

4th. Special directions.

It is, then, like the preceding, simple, concise, and practical, and in accord with the conditions of war.

Upon reading the three orders cited, one immediately forms a complete idea of the movements to be made; and all the important details are easily understood.

It will in this connection be observed that sufficient latitude is given the generals to enable them to adapt their measures to circumstances as they arise.

2d.—Campaign of 1870.—Notwithstanding the many im-

portant wars that occurred from 1806 to 1870, no new rule was brought forward to change the practices relating to orders issued for the conduct of marches—practices which tradition has taken upon itself to transmit. Yet in several comparatively recent wars, carried on under circumstances of quite an unusual character, these have been subjected to changes. The campaigns in Africa and Mexico may be cited as examples.

In these countries the troops were formed in weak columns, each of whose units, even the smallest, had sometimes to play a distinct part. During the movements incident to these expeditions, it was the practice to have the orders include instructions upon the minutest matters of detail; and it seems that in 1870 this practice was followed [in the French army] in orders relating to the march of grand armies.

Moreover, in Africa and Mexico the baggage and convoys were often the source of very serious difficulty, and the recollection of this appears to have had its influence upon the orders for the march, both lengthening and complicating them.

To illustrate:

On the 2d of August, 1870, while the 2d Corps of the Army of the Rhine was executing its offensive movement at Sarrebruck, the 5th and 3d Corps were charged with making demonstrations, the one to the right beyond Sarreguemines, the other to the left, toward Völklingen.

These movements, intended for reconnaissances, had for object, as has been said, "to oblige the enemy to deploy his forces and disclose his plans."

To this end, the following order was, on the evening of August 1, sent to the brigade and division generals and the chiefs of special services of the 5th Corps.

ORDER OF MARCH OF THE 5TH CORPS FOR THE MOVEMENT OF AUGUST 2.

"The first two divisions of infantry and the corps cavalry will, to-morrow, the 2d instant, make a reconnaissance in force upon the right banks of the Sarre and the Blies.

"The movement will begin at 5:30 A. M.

"The 5th lancers will move from Rohrbach in the direction of Obergailbach, where it will connect with the troops on its left.

"The 3d lancers will proceed to the Visling farm, thence to Bliesbrüchen, and then to Rheinheim, where it will cross the Blies. From Rheinheim it will advance to the heights overlooking Gersheim to the right.

"*First Division.*—The 61st regiment will leave the Visling farm at 3:30, proceed to Bliesbrüchen, and thence to Rheinheim, where it will await the lancers, permit them to pass, and support them in their movement to a point one or two kilometres north of Rheinheim. One battalion will remain at Bliesbrüchen as a reserve. Colonel Flogny, with the squadron of hussars of the 1st Division and the squadron of the 12th chasseurs, will take the Frauenberg route, pass through this village, follow the Zweibrüchen road, and push his head of column as far as Bebelsheim.

"A brigade of the Goze Division will proceed to Frauenberg. One of its regiments will cross the Blies, and take position upon the plateau overlooking this village, at a distance of two kilometres to the north. This force will be accompanied by a battery; and its advanced-guard, at least a battalion strong, will be pushed forward beyond the wood of Neuwiederwald.

"The remainder of the brigade, attended by a battery, will take position upon the heights commanding the left bank of the Blies.

"The other brigade, with the 3d battery of the divi-

sion, will move upon this left bank to a point above Bliesguerschwiller.

"It will not cross the Blies.

"*Second Division.*—The Maussion brigade, preceded by the divisional squadron, will take position above Auersmacher, the infantry crossing the Blies by the railroad bridge, and the cavalry and artillery by the ponton bridge near its mouth. After this brigade has been deployed and has reconnoitered the village of Auersmacher, it will advance and take position upon the plateau extending from the Blies to the Sarre, between Bliesguerschwiller and Kleinblittersdorf.

"The general will reconnoitre Windringen and the village of Rauschbach, upon the Fechingen road to the north, employing the divisional cavalry supported by infantry.

"The Lapasset brigade will not cross the Sarre, but will take up position fronting this river, upon the heights to the north of Grossblittersdorf, in order to protect the movement of the 2d brigade upon the right bank. This brigade will commence its movement at 4 A. M., and will be supported by a battery which will join it this evening.

"These different movements will be made in such a way that all heads of columns may reach their destinations as soon after 7 P. M. as possible.

"The field artillery reserve will follow the movement of the Maussion brigade, not crossing the Blies bridge until the ambulance train of the 2d Division has passed.

"The company of reserve engineers will remain at the ponton bridge of the Blies. The engineer troops will carry their tools on the march.

"The ambulances will accompany their divisions.

"The corps baggage, loaded in its wagons, will remain in camp with a guard.

"The baggage of the Maussion brigade will be parked at Welferding.

"The general-in-chief authorizes, for the march, the use of one wagon for each general officer, and assigns one for use in each regiment.

"The baggage will not be moved except upon the order of the general-in-chief, which will be given only in case the troops remain in position in consequence of the presence of the enemy.

"The 11th regiment of the line will leave a battalion at Sarreguemines; three companies with the grand artillery park, which will furnish a guard for the ponton bridge of the Sarre; three companies for the stone bridge in the town itself, which will send a guard to the ponton bridge of the Blies to take post on the left bank.

"The provost service will hold itself in readiness to move with the baggage.

"The regular train will be ready, but the horses will be left unhitched.

"The auxiliary convoy will not be moved.

"In all these operations, one side of all streets and roads will be kept clear, so that circulation may be maintained, and that orders may be communicated.

"The Maussion brigade will detach a half-battalion to act with the reserve artillery. The detachment will cross the railroad bridge with the brigade, and join this artillery to the north of the Blies ponton bridge."*

Comments.—The first impression made by the reading of this order, is that it is drawn up with care and method, but that it is impossible to at once seize its bearing or general scope. This results from the multiplicity of details which it contains.

To carry it into execution, each chief receiving it would be obliged to neglect the directions given for the

* Campaign of 1870. History of the 5th Corps. *Historic Archives of the War Department.*

movements of his neighbors, in order to devote himself to the task of divining his own.

He would then be obliged to confine his attention first to the transmission of the exact instructions sent him, defining the duties of most of his subordinates, and afterwards to the control which he exercises over their execution. But being thus bound by his orders, he will not be able to make provision for emergencies, such as a sudden encounter with the enemy; and when these arise, will naturally feel obliged to refer the matter to a superior who so far has given all orders, and to await his further instructions. He will lack, at the decisive moment, the necessary resolution and hardihood. This order of march, then, suppresses the initiative in the highest ranks of the hierarchy at the moment when, in modern armies, it has become the first pledge of success.

From a tactical point of view, it is to be observed that the exploration service prescribed to the cavalry in this instance does not exceed a distance of 8 kilometres, at the same time that the enemy sends the bulk of his cavalry divisions at least 24 kilometres in advance, and his squadrons of mounted scouts from 35 to 40 kilometres.

This simple comparison of the limits of exploration suffices to show that this reconnaissance of the 5th Corps could lead to no beneficial results.

In the same campaign the Prussian orders relating to marches have quite a different character.

The leaders of the enemy's armies seemed to have been inspired by the campaigns of the First Empire, and to have developed a respect for the initiative of the generals, and a breadth of view which allowed the latter the greatest freedom of action.

3d.—German Orders in 1870.—The order sent by Von Moltke on August 9 of this year to the three armies di-

rected by him has been often quoted. We shall therefore not reproduce it here, but content ourselves with a summary.

This order sets forth:

1st. The probable position of the enemy;

2d. The general direction for the march of the group of armies;

3d. The roads to be followed by each of them;

4th. General instructions relating to the scope of reconnaissances beyond the front, and the support to be given the cavalry divisions;

5th. Special recommendations.

This order is then as short as possible. After its receipt, the commander-in-chief of the II. Army, in his turn, addressed an order to his corps which prescribed:

"To the III. Corps, to move to Faulquemont on the 11th, its advanced-guard regulating its march by that of the cavalry which it is to support.

"To the IX. Corps, to reach Bening-les-Saint-Avold and Merlebach with its heads of columns, its left at Sarrebruck.

"To the IV. Corps, to occupy with its head of column, Harskirchen; with its principal force, Saar-Union; with its advanced-guard, the line Altwiller-Münster-Marimont-la-Haute; its cavalry exploring the ground to the south of Saar-Union, in the direction of Fenestrange.

"To the X. Corps, to push its advanced-guard toward Gros-Tenquin and Landroff, the head of column of the principal part to Hellimer, the left to Puttelange.

"To the Guard, to move its heads of columns to Insming, its left to Sarralbe.

"To the XII. Corps, to cross the Sarre and the Blies, and to remain upon the left bank of the former river, its heads of columns at Metzing and Dibling, or to be pushed, if need be, as far as Woustwiller."

This order in its turn indicated to the different corps

only the sites to be occupied by their principal fractions. The corps commanders transmitted it to the division generals and to the chiefs of special services, likewise limiting the directions to the general action of the unit addressed.

The commander of the IX. Corps, for example, issued the following order:

"HEADQUARTERS, SARREBRUCK, August 10, 1870.

"This corps will move upon Paris to-morrow by the main road.

"The 18th Division will advance as far as Merlebach and Bening-les-Saint-Avold.

"It will occupy the villages of . . . . . ., the division staff at Merlebach. The corps artillery will proceed to . . . . . The 25th Division will occupy the villages of . . . . . It will make use of the Saint-Arnual bridge, and afterwards order its destruction. The pioneers will then be cantoned in its vicinity.

"The trains will move to Stiring-Wendel. The corps headquarters will be at Forbach.

"In order to avoid misunderstandings, attention is called to the fact that the corps is to extend no farther than a quarter of a [German] mile (1850 metres) to the right of the Paris road, and no farther than twice this distance to its left. This prescription will be rigorously observed in matters relating to requisitions, which will always be made under the supervision of an officer, and so far as possible, of an administrative clerk. Receipts will always be given when asked for.

"Following are instructions relative to the distributions.

"Signed: VON MANSTEIN."

It is thus seen that the order for the march of this corps contained no instructions upon the distances, the

roads to be followed, or the dispositions to be made. It may be summarized thus:

1st. Indication of the general direction of marches;

2d. Indication of the points of cantonment of the large units;

3d. Special recommendations.

Finally, the commander of one of the divisions, the 25th, in his turn transmitted this order in the following form:

"Division Staff, SAINT-JEAN, August 10, 1870.

"The division will cross the Sarre to-morrow by two bridges. The 49th brigade will have its head of column assembled, at 7 A. M., in the market-place of Saint-Jean, before the Old Bridge, ready to move.

"The 25th cavalry brigade and then the divisional batteries will follow the 49th brigade.

"The 50th infantry brigade will also move at 7 A. M., and will cross the Saint-Arnual bridge. After its passage, the company of pioneers will destroy the bridge, and will then locate itself at the Sophie glass-works. The munition, ambulance, and baggage wagons, and led horses, will alone follow the troops.

"The other wagons will keep their positions in their respective columns.

"In each brigade a mounted officer will be detailed to-morrow to take charge of the baggage.

"The convoys and trains will set out at 7 A. M., passing through Sarrebruck.

"Signed: PRINCE LOUIS OF HESSE."

A table accompanied this order, indicating the camping sites to be occupied by each unit.

It is then in the orders relating to the march of divisions that we find the first details of execution, and even here they relate only to the units (brigades or artillery

groups) addressed. There was thus no restraint put upon the exercise of the initiative by the subordinate leaders.

Stated in brief, the order of march of the 25th Division indicated only:

1st. The general scope of the movement;

2d. The hour of departure and the point where the head of column was to assemble;

3d. The positions in the column of the constituent units of the division—the infantry brigades, the brigade of cavalry, the divisional artillery, the trains and convoys. The camping sites were indicated separately.

It is to be observed that in the German army all the corps did not act in the same way.

The commander of the V. Corps, for example, issued to his troops, on the 3d of August, on the eve of crossing the frontier, an order divided into two parts. The one gave the normal dispositions for the march of a corps along a single road; the other comprised instructions relative to the movements of the following day.

After this time, the corps commander sent his subordinates a simple outline of the distances to be traversed and the places to be reached.

In brief, the German orders for marches in 1870 are very similar to those of the campaigns of the First Empire.

They are more precise, perhaps, but this seems to have been necessary with such large masses and so many different special services.

But all these orders have this characteristic, that in reference to operations, they respect the initiative of the chief who receives them, and generally contain no details upon the conduct of the inferior units.

It is to this peculiarity, to this custom consecrated by tradition and sanctioned by experience, and to the spirit which animates the corps of German officers, that we must look for the secret of this assemblage of wills

concurring, in 1866 to 1870, with unflagging resolution and ardor to a common end.

We must conclude, therefore, that orders for marches issued to armies or to large units should specify the aim of the operation, the directions to be taken, the camping sites, and the method of providing for the troops; that the dispositions for the march should be considered in advance, and that each chief should be left entirely free in regulating the movements of the fractions of his command.

It remains to study the dispositions referred to.

V.—Dispositions for the March.

To conclude the study of marches, we must investigate the conditions which indicate with precision the extent of the fronts and zones of marches, the formations to be adopted, and the means of protecting the movements.

These conditions are as variable as the events which give rise to them. Like them, they are subject to the general law of the unforeseen. They rest, however, upon a principle dictated by experience, in virtue of which armies disperse for subsistence at a distance from the enemy, and concentrate for battle when near him.

To what extent is this principle applicable in the field to-day?

The investigation of facts can alone inform us.

The past does not offer more absolute rules in this regard than the present, but simply general principles whose applications vary according to circumstances, and which great warriors have never disregarded.

On January 12, 1806, Napoleon, wishing to advise his brother Joseph upon the conduct of the marches which the latter was about to undertake in Italy with three corps, in order to gain possession of his kingdom of Naples, summed up the principles to be followed in these terms:

"I say to you again, do not divide your forces! Let your entire army cross the Apennines, and let your three corps be directed upon Naples, and so disposed as to be able to unite upon the same field of battle in a single day."

This rule is always true. To-day, as then, it is the basis of combinations for the march. But when it is applied to armies of five or six corps, or to groups of two or three armies, it meets with new difficulties.

In order to be concentrated in a day, an army of five corps, with two divisions of cavalry, or from 150,000 to 180,000 men in all, should have, as we have already seen, a depth not to exceed the extent of a day's march, and a front not in excess of twice this distance. In adopting 22 kilometres [about 13.7 miles] as the mean march of a corps, a depth of 22 kilometres and a front of 44 kilometres would be necessary. Now, a corps without parks or convoys occupies, in column, a length of from 20 to 21 kilometres. In order to apply Napoleon's principles, then, each of these corps should have a separate road at its disposal, and for the five corps the roads should not be farther than 8 kilometres apart.

It is difficult to realize these conditions; but they may be met with, and, in Europe, it is quite often possible to make use of five roads upon fronts of from 40 to 48 kilometres. It will not be impossible, then, for an army be disposed thus.

Experience shows, however, that for its security it should adopt this formation only when it has absolutely nothing to fear from the enemy. Almost always, in order to secure its concentration without inconvenient delay, it will be forced to form in two échelons, half a day's march apart, with three corps in first and two in second line.

However, the study of actual circumstances can alone give practical views on this subject.

Let us examine at first the theories in vogue during the wars of the Republic and the Empire. After the examples already cited, a single case will no doubt be sufficient to illustrate the effect both of a neglect and an application of proper principles.

1st.—Moreau's Campaign upon the Danube in 1800.—On the 10th of May, after the combat at Biberach, the Austrian field-marshal, Kray, retired upon Ulm and Memmingen, behind the Iller. Moreau, who had just beaten him, followed with his army formed in three columns, which were given the following directions. (*See Plate XXXIII.*)

Right column (Lecourbe) upon Memmingen;

Central column (Gouvion Saint-Cyr) from Biberach by Laufheim upon Ulm;

Left column (Sainte-Suzanne), from Riedlingen (left bank) upon Ulm;

Reserve (Delmas) upon Ochsenhausen.

On the following day, the 11th, in consequence of these dispositions, the army had a front of 50 kilometres [33 miles], occupied by two columns, the centre and the reserve, whose effective did not exceed 50,000 men. These were beyond the reach of assistance by Lecourbe and Sainte-Suzanne in a single day. Kray could debouch from Ulm by Laufheim, upon the left bank of the Iller, with 80,000 men, and overwhelm the first column (St. Cyr) before the arrival of support. If he had taken this resolution, Moreau's army would probably have been lost. But he remained inactive, and the French had the good fortune to escape a signal danger.

Having reached the Iller, Moreau wished to continue to threaten his adversary's communications, and, to this end, prolonged his march to the east.

On the 14th, his right was directed upon Mindelheim, his reserve upon Babenhausen, and his centre upon Weissenhorn, his left being near Ulm.

He occupied a front of 60 kilometres, with the enemy's army upon his left flank.

If he had wished to concentrate his forces on this side, two days would have been required for the movement. Moreover, his army had just been weakened by detaching 20,000 men, on the 12th, to reinforce the Army of Italy. His situation, then, was critical; but, fortunately, the enemy did not appear to suspect it, and remained in position.

On the following days, from the 15th to the 21st, seeing that Kray did not abandon Ulm, Moreau formed the design of manœuvring around the place and dislodging him. He then drew near the enemy's forces, but without concerning himself about the extension of his front, which for a short time reached 80 kilometres [about 50 miles].

These movements exposed his army to great dangers. Saint-Cyr has passed judgment upon them in these terms:

"If the Austrian army and its general had not been discouraged after the reverses sustained since the beginning of the campaign, the movement which the central corps was ordered to make on this day (May 14), would have had serious consequences, being executed in presence of a large army, and without possibility of receiving assistance from the other corps on account of their remoteness. The centre could have been attacked while in the act of defiling across the Iller, which required four hours, during which General Saint-Cyr would have been obliged to oppose the enemy with only a part of his troops; and it is very probable that he would have been defeated if the Austrians had debouched from Ulm, and moved up the right bank of the Iller to a point opposite the bridge of Unter-Kirchberg."*

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* Marshal Gouvion Saint-Cyr. *Memoirs*, Vol. II., p. 243.

Napoleon, who has left detailed observations upon this campaign, expresses himself thus concerning the marches from the 11th to the 21st of May:

"What steps should the French general have taken in order to dislodge Kray from his intrenched camp? * * * On the 14th of May he should have crossed the Iller, put his forces in march in three columns, upon a front not exceeding six leagues, passed the Lech," etc. * * * *

Kray thoroughly comprehended the irresolution of his enemy, for, at the moment Moreau was directing his heads of columns upon Augsburg, he wrote:

"The French army is making a demonstration upon Bavaria, which is not serious, since its divisions are spread along the roads as far back as the Iller, and its line of communications is already very much extended."

Napoleon afterwards adds:

"Moreau three times within forty days repeated the same demonstration, but on each occasion offered the enemy opportunities to beat his isolated divisions. Indeed, the French army during its manœuvres had its left upon Ulm, and its right twenty leagues distant, threatening Bavaria; this was to bid defiance both to the enemy's army and to fortune. During this campaign, the French army, which outnumbered its adversary, was always inferior in numbers on the field of battle. This is what always happens to generals who are irresolute and act without plans and without regard to principles."

Such are the dangers arising from defective marches. Such were the principles affirmed by Napoleon.

Let us observe now their application in the case of modern armies.

The German armies, in their operations of 1870, offer us several examples of marches, whose study should arouse a lively interest. The most remarkable are those

of the first days of August, from the Sarre and the Vosges to the Moselle; then the march of the III. Army from the Moselle toward Châlons; of the same army and the Army of the Meuse from Sedan to Paris; of the II. Army, from Metz to the Loire; and of the Army of the South, from the Seine to the Doubs, etc.

In all these movements, the dispositions are similar. They correspond to the exigencies of the moment, as well as to the requirements of modern military art. Their aim is to assure to the armies the means of support and the conditions of security. The combinations depend upon the greater or less proximity of the enemy; hence arise differences in plans and results with which it is well to be acquainted.

2d.—Marches of the III. Army in August, 1870.—At this time the III. German Army contained five corps, an additional infantry division, and two divisions of cavalry.

After crossing the Vosges, it arrived upon the Moselle on the 15th.

On this date the situation, according to the account of the Prussian general staff, was as follows:

"Definite information concerning the 5th French Corps was wanting; but it was supposed to be in retreat toward the south.

"It was known that considerable forces had concentrated at Châlons, and as to the French masses which had re-crossed the Moselle on the 14th and 15th, it was supposed that they were retreating toward the same point."

Hence in resuming its offensive march, after a short rest, the III. Army was obliged to carefully inform itself about events in its front and upon its left flank.

It was to execute an offensive march in an unfamiliar country, and in the midst of a sensitive people, already wrought up to a high pitch of excitement, and with the

enemy's forces upon both of its flanks. It supposed, however, that its right flank was covered by the II. Army, and therefore concerned itself only about its left.

There seemed little chance of an immediate encounter with the enemy, but it was thought probable that one would take place on the banks of the Marne.

Under these circumstances, the commander-in-chief of this army, on the 16th, sent to his generals a schedule of marches for the 17th, 18th, 19th, and 20th. On the last date, a new line of defense, the Ornain, was to be reached.

The movement was regulated thus:

In first line, three army corps and the Würtemberg Division;

In second line, two corps;

In advance of the front a cavalry division, making exploration to a distance of one or two marches. (*See Plate XXXIV.*)

Upon the left flank a division of cavalry protected the movement.

The extent of the front did not exceed 22 kilometres [about 14 miles]. There was then a certainty of being always able, in case of an unexpected encounter, "to concentrate its forces upon the decisive point in seasonable time."

The movement commenced on the 17th; but on the following day news of the battles fought around Metz and the pressing back of our army within its intrenched camp modified the situation.

The effect of this was as follows, shown in an order sent by the Crown Prince to his generals, prescribing a day's rest and the subsequent continuation of the march to the Meuse.

"It is reported that two divisions of Failly's corps are directed southward upon Mirecourt; the camp at Châlons appears to be strongly occupied; an army is in process

of formation at Paris. It is not impossible that all these forces and some of the troops from Metz will succeed in re-uniting. The III. Army must then expect to find itself again in presence of the enemy in a few days."

In consequence he gave the following orders:

"The corps of the first line will always have their advanced-guards at from half-a-day's march to a day's march in advance, and will keep their fronts cleared by means of the cavalry.

"The advanced-guards will bivouac. The troops in rear will establish their cantonments within the narrowest possible limits.

"Each of the wing corps will guard its exposed flank.

"One of the cavalry divisions will march abreast of the second line, upon the left flank, in order to explore the country to the south.

"In case of meeting the enemy, the advanced-guards are to halt and take positions, while the main bodies of their corps make preparations for battle. They should refrain from taking the offensive, that the army may have time to concentrate.

"Finally the commanders of the different columns will keep in constant communication with each other, and give reciprocal information regarding the incidents of the march."

The formations ordered on the 16th were still preserved.

The corps of the first line formed three columns; those of the second but two.

The movements were executed in conformity with this order.

On the 19th the contact, which had been lost since the third day after the battle of Froeschwiller, was recovered at Chevillon, upon the Chaumont-Châlons railroad. A cavalry patrol was fired at by a group of infantrymen, who at this point were protecting troops from Alsace in the operation of boarding their rail transports.

On the following day this army reached Ornain, after having made daily marches of from 16 to 25 kilometres. The positions then occupied by its corps give quite a correct idea of the scope of the entire movement.

Exploration Service Upon the Front.—*Positions of the troops on the 20th.*—The 4th Cavalry Division, which had been charged with exploration service upon the front, had its main body at Stainville-sur-Saulx, 12 kilometres distant from the front of march and from the heads of columns which occupied the line of the Ornain. It had a squadron of scouts at Blesme, an important junction point upon the principal line of communication from Sarrebourg to Paris. Blesme was 34 kilometres distant from the main body of the division and 46 kilometres from the front of march. The patrols of this division extended as far as the Marne, at Saint-Dizier. They consequently explored the country to a distance of 32 kilometres, or a march and a half from the front. The division pushed out scouts upon the right flank also, to a distance of 12 kilometres.

First Line.—In the first line was the II. Bavarian corps, which formed the right column, with its advanced-guard at Ligny-en-Barrois, upon the Ornain, 12 kilometres distant from the 4th Cavalry Division and 20 from the bulk of the army corps which was at Ménil-la-Horgne. This distance, although exceptional, was not beyond the scope of the orders given.

The V. Corps, which formed the central column, had its advanced-guard at Hevilliers, in advance of the line of the Ornain, near the Saulx. Its main body was at Treveray, upon the Ornain, 11 kilometres in rear.

The Würtemberg Division (centre) was at Houdelaincourt, 7 kilometres to the south of Treveray, upon the Ornain.

The XI. Corps (left column) had its advanced-guard

at Mandres, upon the Joinville road, 10 kilometres in advance of the main force, which was upon the Ornain, at Gondrecourt and Dainville-aux-Forges.

Second Line.—In the second line were the I. Bavarian Corps, at Void, 5 kilometres in rear of the II.; and the VI. Corps at Pagny-la-blanche-Côte, upon the Meuse, 18 kilometres from the XI. Corps.

Exploration Service upon the Flank.—Upon the left flank, the 2d Cavalry Division occupied Saint-Elophe, abreast of the second line, near the Meuse. It was thus 22 kilometres, or a day's march, from the left column, and it had pushed its reconnaissances in the direction of Épinal.

It had formed a flank detachment which was at Neufchâteau, 8 kilometres distant upon the left, exploring toward the south.

To recapitulate the distances, this army extended in depth from Saint-Dezier to Vaucouleurs—where the headquarters were established—or 60 kilometres [about 37 miles], equal to three marches. However, from the advanced-guards of the first line to the main bodies of the corps of the second line, there was a mean distance of only 30 kilometres.

The front of march, from Ligny to Dainville, did not exceed 34 kilometres [21 miles].

The corps of the second line occupied a front of only 21 kilometres [13 miles].

Finally, the exploration service, from Savonnières, upon the Ornain, to Neufchâteau, covered a space of 65 kilometres.

Comments.—This formation for the march provided against all surprises, without interfering with facility of movement, as events soon demonstrated. When it became necessary to change direction toward the north, in

consequence of information received regarding the march of our Châlons army, the German corps had only to execute separate grand wheels to the right, and follow the valleys which they had just reached.

In general, this formation shows that when an army on the march through the enemy's country anticipates an approaching but not immediate encounter, it may adopt the following dispositions:

Its corps in two lines, the first in three columns, and the second at half a march from the first.

The corps of the first line, preceded at a half-march by strong advanced-guards, which should only bivouac at night; the cavalry exploring upon the front and the uncovered flank; the main bodies of the cavalry forces likewise at half a march, their patrols of scouts proceeding far enough to keep in contact with the enemy, if possible, and if not, then to within one or two marches, according to circumstances.

The main bodies of the troops camp in close order, and in case of meeting the enemy, the advanced-guards content themselves with resisting until the arrival of the main forces, the most distant of which should be able to engage in the impending action.

There is great similarity between this formation and that of the French army in 1806. Napoleon then had Murat at the head of his cavalry; Soult, Bernadotte, and Lannes in first line; and Ney, Davout, and Augereau in second line. The central column was stronger than the others by one corps, that of the Guard.

In continuing the study of the marches of the III. Army up to the moment when it changed direction toward the north, we shall see the reconnaissances of the 2d Cavalry Division on the 22d, pushed about 60 kilometres, or two marches, to the front.

On the same day, the German general staff finally gained definite information regarding our positions.

"In its view, the considerable distance then separating the German masses from those of the enemy, permitted a very extended front to be still maintained, so as to utilize the greatest possible number of roads." The front of march of the group formed by the III. Army and the Army of the Meuse, reached thus, on the 22d, a distance of 75 kilometres.

The movement toward the west was executed then, from this date, by the two armies acting in conjunction; and on this occasion Von Moltke adopted a combination deserving especial notice.

"In continuing their movement, the two armies will act in such a way that the III. Army may preserve an advance of one march from the left of the Army of the Meuse, to the end that if the opposing force, the Army of Châlons, attempts to make head again, it may be attacked in front and upon the right flank, and driven northward, away from Paris."

Thus, in case our forces had moved eastward toward the German troops, they would have come into collision with the Army of the Meuse, and during the contest the III. Army, wheeling to the right, would have fallen upon their flank, the line assuming an angular form, which seemed so much in favor with the Prussian chief-of-staff, and which had so often produced decisive results.

These marches toward the west were arrested on the 25th by the intelligence which reached Von Moltke concerning the direction taken by MacMahon's columns.

It is well to attend the German armies for a moment in the colossal wheeling movement executed by them from the 26th to the 31st.

The dispositions for the march made by the III. Army during this month have become classic. They would not, however, harmonize with all possible situations, and should be modified to suit the particular circumstances of a given case. After a great victory, for example, and

in the event of the total absence of the enemy, it would, of course, be advantageous to expand them still farther.

A situation of this kind presented itself to the German armies on the day following Sedan; and although it was exceptional, it will not be without interest to study the execution of the movement which bore them from the Meuse to the Seine.

3d.—March of the German Armies upon Paris in 1870.—The character of this march has been defined as follows by the Prussian general staff:

After Sedan, "it was important for the victor to make an uninterrupted march upon Paris as soon as possible.

"The German staff felt justified in believing that for some time at least it would meet with no serious resistance in the open field. . . . It was expedient that the large forces massed around Sedan, should be separated in order that they might be reformed, etc. . . . To this end the III. Army was to commence the movement toward the south-east, so that the Army of the Meuse following in its turn could take its place as left wing. (*See Plate XXXV.*)

On September 3, the second day after the battle, these masses found themselves distributed thus:

Upon the left bank of the Meuse, their positions formed a curved line 40 kilometres in extent, which reached from Guignicourt (Würtemberg Division) to Carignan (the Guard), through Poix (2d Cavalry Division), Malmy (II. Bavarian Corps), and Raucourt (IV. Corps).

With the exception of the forces left at Sedan during the evacuation, that is to say, with exception of the I. Bavarian Corps, the XI. Corps, and the 4th Cavalry Division, the III. and IV. Armies (Army of the Meuse), were then encamped to the south and to the west of Sedan.

They were covered, from the side of Paris, by the VI. Corps, which had one division (11th) at Juniville, 38 kilometres from the front, with an advanced-guard 8 kilometres beyond Juniville at Aussonce, in the direc- of tion Rheims.

Its 12th Division was at Rethel, toward the right, in the direction of our 13th Corps (Vinoy), which it had attempted to pursue. It was connected with the army by the 6th Cavalry Division, which occupied Attigny, and which was thus found at half a day's march (15 kilometres) in rear of its position.

The order relating to the removal of the forces from the approaches to Sedan, and the establishment of the front of march of the two armies, was issued from the general headquarters on the 3d.

With a view to keeping up regularity of supplies, it directed that the order of battle of the two armies be re-established by inversion.

It then announced that the movement was to be executed upon a very extended front, and indicated Dormans as the march objective for the right of the III. Army, and Laon as the objective of the Army of the Meuse.

The immediate objectives for the 5th were the Rethel-Attigny line for the III. Army and the Poix-le-Chêne for the Army of the Meuse. Once upon the line Laon-Fismes-Dormans-Sézanne, the two armies were to advance abreast of each other.

Such were the instructions which enabled each of these armies to establish its schedule of marches.

The movement commenced on the 4th, and up to the 12th the front of march, the depth of the columns, and the zone of reconnaissance, became expanded, with a view to gathering supplies from the country, and gaining ground to the front as rapidly as possible.

On the 8th, the III. Army, which now comprised only

three corps, a division of independent infantry, and a division of cavalry, extended from Dormans to Châlons, upon a front of 56½ kilometres. Its cavalry division preceded it, but without reconnoitering. In depth, this army occupied a space of 38 kilometres. But after the 12th, when the right had arrived at Nogent l'Artaud, three marches from Paris, the dispositions changed.

The III. Army had just entered the region which seemed to have been indicated by the instructions from the general headquarters as the boundary of the zone of action of the enemy's forces.

From this time the columns and camps were nearer together. But the dispositions in close order required in case of a probable encounter with the enemy were not yet adopted.

On the 16th, this army's heads of columns were one march distant from Paris. It was known that there was no longer reason to be disquieted on the score of the new levies which France was endeavoring to assemble.

The following were the positions of the different forces on this date (*See Plate XXXVI*):

The VI. Corps had been at Meaux for three days, with its advanced-guard at Lagny, 15 kilometres distant;

The V. Corps at Tournan and Fontenay, with advanced-guards at Ozouer-la-Ferrière and Chevry;

The II. Bavarian Corps at Moissy-Cramayel, with advanced-guards 15 kilometres distant toward Lieusaint;

The 2d Cavalry Division occupied Brie-Comte-Robert, a short distance in advance of the front, and its patrols reconnoitered the country up to the very gates of the capital.

Upon the left flank,—the only portion of the advancing army needing protection,—the reconnaissances extended to Melun, 11 kilometres distant.

The front of march reached 41 kilometres [about 25 miles], and the depth of the column 48 kilometres [about 30 miles].

From this time the situation changed. This army was now to move to the investment of the capital, and its columns were obliged to take such precautions as the presence of the enemy dictated.

The march of the III. Army after September 4 was executed then under the most favorable conditions.

The situation was exceptional, due to circumstances which rarely present themselves, and upon the recurrence of which it would be imprudent to rely. In reality, therefore, the movements made by this army in August between the Moselle and the Meuse give the clearest idea of modern strategic marches.

We have in the preceding pages become acquainted with the essential operations of an army acting on the offensive. The marches undertaken by it (the general principles of which have been explained) should conduct it to the vicinity of the enemy, where other situations present themselves, calling for other dispositions. Thenceforth tactical rules become all controlling. Their importance entitles them to consideration in a separate study.

But before attempting this, it is necessary to consider in its turn, the second part of the strategical role devolving upon armies in the field, *the defensive*.

§ 6.—The Defensive.

I.—Conditions of the Defensive.

The disadvantages of the defensive have already been pointed out. They have led to this conclusion, that a country reduced in advance, to the defensive, would be wise to avoid the hazards of war if possible.

This, however, is not an invariable rule. The defensive is not without its chances of success also, and it has often been said that from a tactical point of view

the increased volume of fire due to modern improvements should assure it the victory.

When we seek for the truth of the matter among the facts of the case, we find, indeed, more than one consideration presented in favor of a good defensive.

Von der Goltz says on this subject:

"At the beginning of the war, the offensive will have to occupy the enemy's frontier. He must then traverse a system of frontier fortresses more or less extensive, laying siege to some and masking others. The army daily detaches and leaves in rear small bodies of troops to assure its line of supply stations; at the same time it becomes more and more difficult to receive reinforcements. There thus results from these two causes a constant consumption of men. In a word, the advancing armies melt away like snow beneath the midday sun. The frontiers are passed with hundreds of thousands of troops; the heart of the enemy's country is reached with thousands only.

"In October, 1805, Napoleon entered German territory with 200,000 men; but notwithstanding his remarkable skill in economizing his forces, he could place only 80,000 in line, on the 2d of December, for the decisive battle of Austerlitz.

"The aggressor can only with great difficulty maintain the transports which he had at the commencement of operations. Moreover, at the very moment when his aim seems to be reached through first victories, the necessity of placing new forces in line in order to retain his advantages, soon shows him the difficulty of repairing his losses.

"The situation of the defender is quite otherwise. The bringing forward of men, horses, food, and material, and the satisfying of all the army's wants, are much easier, because the troops are not far distant from their centres of supply, and because there is no danger, as in

the case of the offensive, of having the communications interrupted.

"The defender can besides put himself in condition to repulse an attack with more troops than the aggressor can bring against him.

"The former is supported by the garrisons of the fortified places on the frontier. These compel detachments from the enemy's ranks, if only for the purpose of observation. The aggressor, on the contrary, can not utilize his garrison troops, because he has left them as a guard for his own fortresses, and because he must not lose sight of the possibility of a retreat. Moreover, garrison troops are usually not fitted to act upon the offensive. The defender, on the other hand, can employ all kinds of troops in a sheltered country or in strong positions. And finally, he can utilize levies *en masse*, which is not the case with the assailant.

"The aggressor has to sustain more losses, and is subjected to more hardships and privations. He is obliged to submit to the disadvantage of seeing his force, according as he advances, diminish more rapidly than that of the defender.

"The extraordinary measures which the latter takes to procure recruits, arms, and money are justified by the character of the war. And in spite of a discouraging beginning, when a proud and strong people upholds its army, the defensive acquires a new material strength.

"The Northern States during the war of Secession, and France in the second half of the last war, have given remarkable examples in this regard.

"From a tactical point of view, the chances of the defensive are not less real."

Advantages of the Defensive.—"To-day, on account of the character of his arms, the defender can sweep the ground to his front to a distance of 1,000 metres. The

assailant must, in consequence, traverse a zone of fire ten times as broad as in the days of the smooth-bore. The protection afforded by the natural features of the country, fortified positions, and all other artificial means of resistance, is to the advantage of the defender. In order to prepare himself to receive the attack, he remains quietly in position; his fire continues without interruption, while the aggressor must often cease firing in order to move to the front. The latter has thus to endure fatigue, dangers, and losses.

"With the defender, affairs are less complicated. There is greater unity in the conduct of operations; the subordinate leaders are less frequently engaged in independent actions; the supply of ammunition is more easily kept up; and the reserves are more readily brought into line. These result from the facts that but one line is occupied; that no forward movements are made leading to a separation of the troops; that a definite zone is defended; that the general line of direction is not changed; and that one position is not abandoned for another, as required by a good offensive."

The defensive is then a mode of operation which may lead to victory. It is necessary, moreover, without underrating the favorable chances of the offensive, to recall that a nation may be forcibly drawn into a defensive war, or menaced by the sudden aggression of its neighbors.

What shall such a nation do, then, if not proudly accept the gage, with a firm determination to lay down its arms only after the liberation of the country.

In modern warfare, the circumstances which generally compel a nation to take the defensive are:

1st. Inferiority of forces;

2d. Delays in assembling its armies.

Numerical inferiority obliges a country to adopt a peculiar system of war, and to shape all its efforts in time of peace to a single end—the defense of the territory.

This is the condition of the minor states. Such a defense gives rise to special operations interesting to study, but which would take us away from the subject at hand.

Usually, it is the delays incident to mobilization and concentration which reduce an army to the defensive. It is expedient then to recur to these operations.

II.—Concentration.

For mobilization, the question is simple. The only duty imposed upon the defensive in this regard, is to make its system as perfect as possible. It is a work to be executed in time of peace—a work in preparation for war.

But as we are now considering the side of the defense, we know that its mobilization will be less rapid than that of the adversary. How to effect the concentration, and what zone to choose? Such is the first problem to be solved.

Preceding studies have already answered the question.

We have seen, indeed, that in 1870 it was believed by the Prussian general staff, at the opening of the campaign, that a French army of 150,000 men would be ready to take the offensive upon the Sarre within nine days after the commencement of mobilization. At this date the concentration of the Prussian armies had scarcely begun. They were thus to find themselves in a defensive situation; at least such was the supposition respecting the II. Army, which was at this time designed to act upon the middle Rhine and in the Palatinate. Thence resulted combinations which have already been described, and which permit us to consider the following principles as applicable to defensive operations:

1st. *Troops designed to act on the defensive should not be concentrated upon the zone at the extremity of the railroad lines, but in the interior of the country;*

2d. *The zone of concentration should be far enough re-*

moved from the enemy's to assure the security of the assemblements and to permit the concentration to be completed before the enemy is met.

In 1870, the II. Prussian Army was certain of having a numerical superiority upon the fourteenth day of mobilization; so that in concentrating itself within six marches of our assemblements, it was in condition to fight, with chances of success, a French army that had taken the initiative on the ninth day. Hence the selection of the line of the Rhine, six marches distant from the Sarre, as a zone of concentration.

3d. *An army in danger of receiving the enemy's shock upon its zone of concentration should choose this zone in rear of a good defensive line, and bring all its forces into play. In this case it will be advantageous to have fortified places as points of support upon the flanks of the zone of concentration.*

In general, the principles relating to concentrations on the part of the defensive, may be found in the advice which Napoleon on frequent occasions gave his generals. On September 18, 1805, he wrote to Masséna, then general-in-chief of the Army of Italy:

"You have nearly 60,000 men, which is a third more than I ever had under similar circumstances. . . . . I cannot advise you too strongly not to disperse your forces. . . . . I caution you again to hold all your troops together. If you give battle with 50,000 men, the enemy cannot successfully cope with you; if you engage him with a less force, you will experience defeat. . . . . I commit my brave Army of Italy to you; let it not be beaten in detail."*

"Upon all occasions," says General Berthaut, "Napoleon held the same language. He blamed not only the dispersion of troops belonging to the same army, but

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* *Military Correspondence of Napoleon I.*, Vol. IV.

also, in certain cases, the distribution of the forces into several independent armies at too great a distance from each other to offer mutual support."

"'We should,' said he, 'have remained upon the defensive in Germany in 1799, since we were not able to bring together forces superior to the enemy.'

"'At all events, the three armies of the Danube, of Helvetia, and of the Lower Rhine, should have formed but a single force. . . . . The 40,000 men composing the Army of the Danube, joined with the Army of Helvetia, were sufficient to assure the possession of Switzerland and the occupation of the camps upon the right bank of the Rhine, on the side of Schaffhausen and Stein, taking the mountains of the Black Forest in rear.'"*

"It is certain, then," adds General Berthaut, "that dispersion of the forces, for any reason whatever, is a cause of weakness to the defense, and will probably lead to its ruin; that in order to retain the possibility of making an energetic and successful defense, it is absolutely essential to concentrate the entire army, or at least the bulk of the forces, upon a single point of the threatened frontier; that, moreover, when the effectives are so numerous as to oblige the formation of several armies, it is necessary that these armies submit to the direction of a generalissimo, and be so disposed as to operate in concert and to have the power to support each other under all circumstances."†

Protection of the Frontiers.—During the period of concentration, one of the first cares of the commander will be the protection of the frontiers.

This operation has already been considered in case of

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* *Military Correspondence of Napoleon I.*, Vol. II.

† *Principles of Strategy*, General Berthaut.

the offensive. The principles are the same for the defensive. It is not necessary, therefore, to return to them.

However, it will be in order to recall that activity on the part of the defensive constitutes its principal claim to success, and that this activity depends above all upon the accuracy of the information received regarding the enemy. It may then be affirmed that vigilance on the part of the troops placed upon the frontier should be still greater on the defensive than on the offensive.

The Archduke Albert in 1866, upon the Mincio, gave an example of this, which has been several times noticed. His vigilance was the prime cause of his success.

III.—Movements after Concentration.

What movements should be made by an army upon the defensive after its concentration?

History shows us that this depends upon the time intervening between the end of the concentration and the first encounters. Either the army will be able to move forward to meet the enemy and undertake an active defense, or it will be behindhand in its preparations, and in consequence obliged to await the enemy, resigning itself from the first to a passive defense.

Military men of all times have laid down as a principle that an army should, whenever possible, resolutely and energetically adopt the active defense. It should leave its encampments and march toward the enemy.

Jomini says on this subject:

"The principal advantage of the defensive lies in the fact that it is able to select its own theatre of war. But it cannot draw all possible advantages from the situation by a simple passive defense.

"For this it is necessary to adopt an active defense—now holding the army in waiting, now seizing a favorable juncture to make an attack. The best results are

thus obtained. In choosing this character of defense, the advantage of having a theatre of war prepared in advance is united with the initiative of the movements."

Napoleon was more positive still:

"Do not adopt the defensive," said he in his correspondence, "when it is possible for you to do otherwise. If you are reduced to this sad extremity, let it be to gain time, to await reinforcements, to form your soldiers, to seek alliances, to lead the enemy to a distance from his base of operations; but have an eventual offensive as the constant aim of your movements."

Again he defined in precise terms the character of a good defensive.

In 1806, writing to his brother Joseph, then King of Naples, to indicate to him the means of defending his kingdom, he thus expressed himself:

"SAINT CLOUD, July 28, 1806.

"As soon as General Reynier is extricated and has united with your reinforcements, you should dispose your brigades in échelon a day's march apart, on the line from Naples to Cassano, so that in three days, four brigades, numbering from ten to twelve thousand men, may be able to assemble.

"It is by this disposition in échelon that the defensive is prepared for all emergencies, so that when it is desired to take the offensive, in order to carry out a particular aim, the enemy having seen you on the defensive will not be able to find you out, and before he can change his attitude, the ten or twelve days required for your operations will have passed. I am not at all certain that I have made myself undersood. Great mistakes have been made in your system of defense; none was ever made with impunity. The experienced soldier sees them at a glance, but the effects are felt two months afterwards. As the two important points were

Gaeta and Reggio, and as you have 38,000 men, you should have formed the brigades into five divisions, placed in échelon at intervals of one or two marches, so as to be able to support each other. The enemy would then have found you in such a position that he would not have dared to make a single move, for at once and without loss of a single day, you could have united your troops at Gaeta, Reggio, or Santa Eufemia. Here are the dispositions to be made for the Sicily expedition. You must in starting out be too formidable to be attacked. You must abandon all positions in your rear except those necessary for the defense of your capital, and take a full offensive against the enemy, who, the descent having been made, will be powerless to attempt anything. Such is the art of war. You will see many who fight well, but no one who understands the application of this principle.

"The whole art of war consists, on the one hand, in a well-planned and extremely prudent defensive, on the other, in a bold and rapid offensive."

What, according to this, is the practical rule to be followed in our day in an active defense, in order to move toward the enemy and take the initiative?

The II. Prussian Army, in 1870, in its march from its zone of concentration upon the French army, which it expected to see debouch in force from the side of the Sarre, will answer the question for us.

The dispositions made by it have already been stated, and it will suffice to briefly recall them:

1st. *To move the independent cavalry forward to meet the enemy, in order to take the contact as soon as possible;*

2d. *To advance in échelon, in close order, ready to engage with all the disposable forces;*

3d. *In case a meeting with the enemy is imminent, to halt in a strong defensive position, selected and, if need be, prepared in advance.*

The controlling principle in this species of operations is activity in reconnoitering, and in executing the necessary movements.

In a passive defense, on the contrary, there is only one combination possible, a defense in position. This belongs properly to the subject of defensive battles, and will be considered in a subsequent study.

It is seen from what precedes that the defensive operations of an army at the beginning of a campaign, have no other aim than the *defense of the frontiers.*

For a long time combinations were adopted in this connection which experience has rejected as unsound, but which may with profit be recalled for the purpose of indicating at once their defects and their dangers.

One of them favors the distribution of the troops *en cordon.*

This system is condemned to-day. Napoleon I. had occasion, in 1808, to express himself clearly in this regard, in a letter to Berthier, referring to the retrograde movement of our armies in Spain.

"AUGUST 16, 1808.

"What is this project of having Marshal Bessières march upon Frias, while awaiting the arrival of his right toward Bilbao or Santander? Does it mean that the cordon system has been adopted? Is the object to prevent the passing of contraband goods or the enemy? Is it not known that from Frias to Bilbao and Santander is a distance of from four to five marches? Who could have advised the King to adopt the method of defense by cordons? After ten years of war, are these stupidities to be revived?"

Under other circumstances, armies, at the opening of campaigns, have adopted concentrations by groups.

Napoleon has likewise shown himself the enemy of this system, and his views on the subject are clearly set forth in the advice given Masséna in 1805.

The campaigns of 1866 and 1870 have demonstrated to what dangers armies are exposed in our day by the adoption of such a system.

It may then be said that on the defensive still more than on the offensive, the assemblements should be effected upon a single zone, and in concentrated order—an order sufficiently extended to secure easy supply, but close enough to maintain the army in readiness to fight with the greatest possible number of troops.

IV.—Defensive Operations after the First Encounters.

Let us presume the army on the defense to have been beaten in the first encounters. It has now to organize the means of continuing the resistance. The most critical period in the life of a people has arrived, and an army which foresees that its part is to act upon the defensive, cannot too soon prepare for the arduous task devolving upon it after the first defeats.

Napoleon, upon the occasion of the defense of Dalmatia in 1806, defined in part what should be done in cases of the kind we are considering:

"SAINT CLOUD, September 3, 1806.

"There are no means of preventing an army with double or treble the forces which I have in Dalmatia from effecting a landing upon any point whatever of the eighty leagues of coast, and of soon obtaining a decided advantage over my army, if its organization is in keeping with its numbers.

"It is likewise impossible for me to prevent a stronger army coming from the Austrian or Turkish frontier, from obtaining advantages over an army in Dalmatia.

"But must the six, eight, or twelve thousand men, whom the general course of political events has led me to keep in Dalmatia, be crushed, and deprived of their

resources after a few combats? Must my munitions, my hospitals, and my magazines located at different points in Dalmatia, fall a prey to the enemy as soon as he has proved his superiority in the field? No; I must provide for this in advance, and the only successful means of avoiding it is to organize a grand depot place, which shall contain my hospitals, magazines, and quarters for troops; a place where my Dalmatian forces may rally and reform, either for the purpose of defending themselves or of again taking the field when circumstances shall permit. I call this the central place. So long as it exists, my troops may lose combats, but they will thereby sustain only the ordinary losses of war; so long as it exists they themselves, after having rested, may be able to again grasp victory, or at least furnish me the two advantages of holding three times their number in the siege of the place, and of giving me three or four months in which to reach them with succor; for so long as the place remains uncaptured, the fate of the province is not decided, and the immense material connected with the defense of so great a province is not lost.

"It was asked in the last century, if fortifications were of any utility. There are sovereigns who have condemned them, and in consequence have dismantled their strongholds. For myself, I would put the question in another way, and ask if it is possible to make all the combinations required by war without fortified places, and would declare that it is not. Without fortified depot towns, good plans of campaign can not be formed; and without what I call field-places, furnishing shelter against the attacks of hussars and detached bodies, an offensive war can not be properly carried on. In this connection, several generals who in their wisdom did not favor fortified places, have ended by deciding that a war of invasion could not be made. But how many such places are necessary? We are persuaded that it

is the same here as with the distribution of the troops. Will you pretend to defend an entire frontier by a cordon? You will be weak at every point, for all human means are limited—artillery, money, good generals, good subordinates—and if you are obliged to spread out your forces, you will be strong nowhere. But let us confine ourselves to the question.

"A central fortified place once selected, all the plans of my generals should be established with reference to it. Has a superior force of the enemy been landed? The care of the generals should be to direct all the operations in such a way as to assure their retreat upon this central place.

"All the army's magazines will be concentrated there, all means of defense accumulated there in abundance, and a definite and certain aim be given to the operations of the generals. Everything becomes simple, easy, well-defined, nothing is vague, when the central point of a country has thus been prepared beforehand by superior authority.

"If, on the contrary, I am at war with Austria, which is the most probable hypothesis, Zara offers me many advantages. The 10,000 or 12,000 men which I have in Dalmatia, brought together at Zara, could combine with my Isonzo army, and thus become one of the factors in the war. The Austrians then cannot neglect them, but will be obliged to detach an equal number of troops to hold them in check, and by this means I shall not be weakened by Dalmatia. In occupying a great deal of territory with my armies, I should not lose sight of the fact that they must all be made to co-operate in the general plan of campaign, in order that my strength may suffer no, or the least possible, diminution through any of them.

"But does it follow that all my forces should be concentrated at Zara? Certainly not. My troops should

occupy the positions which my generals may judge the most proper for a camp, from which all the frontier points may be reached. But the situations to be occupied by these troops will depend upon their number, and upon circumstances which change from month to month. It is then of no importance to attempt to foresee what steps will here be suitable."

Without entering more at large upon this subject, which the study of facts will alone profitably develop, we may sum up as follows the duties incumbent upon an army in the case we are considering:

1st. Preparation during peace of the means of resistance.

2d. Choice of the most advantageous lines of retreat;

3d. Reconnaissance and preparation of defensive positions of the second line which will impede the enemy's march;

4th. Preparation of the means of resistance designed to divide the adversary's forces;

5th. Dispositions which will permit the offensive to be taken when a favorable opportunity is presented.

After this rapid exposition of the general principles relative to defensive operations, it is well to notice their application in several campaigns. This will be the best means of understanding their practical bearing and the chances of success or defeat to which they lead.

Nothing can, in this regard, interest us more than the defense of our own country. It was the opinion of Napoleon, and experience has unfortunately proved, that of all the countries of Europe, it is our own with whose defensive resources we should be the best acquainted.

In a letter dated Finkenstein, April 19, 1807, the Emperor wrote his minister of war on the subject of a programme of military instruction:

". . . . . It would necessitate a knowledge of the various plans of campaign adopted in the different epochs

of our history, either for invasion or defense; the origin of successes, the cause of defeats. . . . . How our frontiers have been defended in different wars by great captains. . . . . It would be necessary to learn how to profit by the mistakes which have caused reverses, and to appreciate the dispositions which would have prevented them."*

Let us follow this advice and revert to the past, to the most critical period in our history, to the wars of the First Republic.

V.—Defense of Argonne in 1792.—First Invasion.

In the beginning of this year our soil was menaced by the foreigner, and, in anticipation of hostilities, the government formed four armies. On the 20th of April it was forced to declare war, and on the 11th of July to proclaim the country in danger.

We had then:

1st. An army of the North, under Lafayette, comprising two forces; the first in North 18,000, and the second on the Meuse 20,000 strong.

2d. An army of the East, under Lückner, composed likewise of two forces; one on the Moselle, with an effective of 18,000 men; the other in Alsace, containing 40,000.

Our forces thus reached 96,000 men, who were poorly equipped, poorly organized, undisciplined, and without confidence in their leaders. They were distributed *en cordon* along the frontiers from Dunkirk to Hüningen.

The Allies had placed on foot an army of 160,000 men.

Their numerical superiority seemed to assure success; but they did not know how to profit by it, and instead of acting together, separated into several groups, the three principal being:

That of the centre, 60,000 strong, under the Duke of Brunswick, general-in-chief;

* General Pierron.

That of the right, composed of 20,000 Austrians, commanded by Clerfayt;

That of the left, with an effective of 16,000 men, under the Prince of Hohenlohe-Kirchberg.

In addition there were 20,000 Austrians in the Netherlands; a force of 25,000 men upon the Rhine; and 12,000 *émigrés* scattered among these different bodies.

The plan of the Allies was to pierce our centre, and to march upon Paris by Verdun and Châlons.

With this in view, the principal army, composed of Prussians, Hessians, and *émigrés*, was to move by way of Luxemburg upon Longwy and Verdun.

The right, under Clerfayt, was to cross the Chiers, between Montmedy and Sedan, drive back Lafayette's army, which covered these two places, pass the Meuse between Verdun and Sedan, and march upon Paris by Rheims and Soissons.

The role assigned to the left was to cross the Moselle between Thionville and Treves, and successively attack the former place and Metz.

On the 30th of July, these forces began the march, and moving with extreme slowness toward our frontier, reached it only after the lapse of twenty days, its distance from Coblentz, however, being but forty leagues.

The first invasion commenced on the 19th of August. On the 23d the intimidated garrison of Longwy capitulated, and the ease with which this success was gained increased the enemy's confidence. At this moment our Army of the North was signally lacking in cohesion. It had just lost its leader, Lafayette, who, not approving of the events of the 10th of August, had been forced to leave France. He had not yet been replaced; and had the Allies moved with celerity, this force would have been overwhelmed. It would have been easy for them then to have conquered Lückner, and thus opened the road to Paris. But they preferred to direct themselves upon

the capital first of all, without perceiving what they learned later, that 200,000 men were necessary for such an enterprise: 100,000 to march upon Paris, and two armies of 50,000 each to observe the fortified places and hold our forces in check, while covering the lines of communications.

On the 30th the army arrived in front of Verdun. A portion of the population and the garrison having raised a cowardly revolt against the commandant, Beaurepaire, who wished to defend the place, the latter killed himself, and on the 2d of September the city was taken. There was now only one stronghold remaining between the enemy and Paris.

The situation was grave, and the deep feeling which it aroused throughout France, has left indelible traces upon her history. The Government changed its generals. Dumouriez was appointed commander of the Army of the North, and Kellermann was given command of the Army of the East in place of Lückner.

Upon reaching his headquarters at Sedan, Dumouriez found his army distrustful and ill-disposed.

He immediately assembled a council-of-war to fix upon a plan of defense, and at the same time to discover the views of his generals.

The situation was as follows:

The Prussian grand army occupied Verdun.

Clerfayt was at Stenay and Juvigny.

The left, under Hohenlohe, had invested Thionville.

The Hessians held Longwy.

The Duke of Saxe-Teschen covered the Netherlands.

Other troops protected the line of the Rhine.

Our armies were separated by the forces of the Allies.

Dumouriez had only 23,000 men at Sedan. Beurnonville, Moreton, and Duval were encamped at Maulde, Maubeuge, and Lille with 30,000 men. Kellermann was

at Metz with 20,000; Custine at Landau with 15,000, and Biron in Alsace with 30,000. (*See Plate XXXVI.*)

After considering the condition of affairs, the generals were of the opinion that in order to defend the territory it would be advisable to fall back to the Marne, occupy a strong defensive position there, intrench, bring together the armies of the North and East, and await reinforcements.

This was the opinion of men who had lost confidence in themselves and in their troops—men who could foresee nothing but defeat, and whose spirits had already given way to discouragement. Dumouriez alone was of a contrary mind. In his eyes Argonne, with its forests, its marshes, its numerous streams, and its five defiles, formed a good line of defense. The important point was to occupy it before the Prussians, and to hold it against them.

The enterprise was not easy. Our army was at the northern extremity of this chain.

It was essential to at first seize the passage at Les Islettes, which opened the road to Châlons, and that at Grandpré, which controlled the road to Rheims.

This operation required a march of twelve leagues in close proximity to the Prussians; and to effect it Dumouriez resolved to deceive them by an offensive demonstration upon their right. He entrusted this to Dillon, who, with a strong division of 8,000 men, threw himself upon the enemy's outposts at Stenay, pushed them back beyond the Meuse, and then moved to the right and occupied La Chalade and Les Islettes without molestation.

The remainder of the army having followed this movement, our troops found themselves, on September 4, in position upon the chosen line of defense.

Dumouriez held the defile of Grandpré with 15,000 men. His troops camped upon the heights rising in the form of an amphitheater between the Aisne and the Aire,

the left at Grandpré, the right at Marcq, the front and both wings covered by a bend in the Aire. A strong advanced-guard under Miranda and Stengel was to the east of the Aire, the right at Saint-Juvin, the centre at Verpel, the left toward Beffu and Le Morthomme. This position was immediately surrounded by strong intrenchments. It was strengthened by that of La Croix-aux-Bois, which was defended by 1,000 infantry and 300 dragoons.

Finally, the passage at Le Chêne-Populeux was defended by Dubouquet, with a division recently organized at Rheims, which contained 4,000 men drawn from the Army of the North and a force of 1,800 national guards. Total strength of forces here, about 30,000 men.

At the same time Dumouriez ordered Kellermann to rejoin him with 22,000 men by Ligny and Bar-le-Duc in the direction of Sainte-Menehould; and Beurnonville to bring him 16,000 men from the Army of the North to Rethel, and proceed thence to Grandpré.

The first dispositions consisted then in concentrating the bulk of the disposable troops upon the line of defense, faced toward the enemy's positions, and occupying all the passages in force.

These measures were completed by creating camps of instruction at Châlons, Rheims, and Meaux, and by sending thither all reinforcements drawn from the volunteers of Paris. The Government calculated thus upon bringing together 100,000 men between the Prussians and the capital. Finally, on all sides workshops were established to accelerate the manufacture of arms and equipments.

Brunswick having learned of the arrival of Dumouriez in Argonne, resolved to prolong his front towards Landres in order to gain our left. He caused demonstrations to be made upon Romagne and Briquenay. Dumouriez, deceived by these movements, and thinking that Grand-

pré alone was threatened, reduced his forces at La Croix-aux-Bois to 100 men. This mistake came near compromising the success of the campaign.

Clerfayt perceived the error and captured this defile on 12th of September. He thus cut our forces into two parts, and threatened our communications. Dumouriez immediately ordered General Chazot to retake La Croix-aux-Bois with two brigades, reinforced by two battalions, six squadrons, and four pieces.

Chazot attacked on the 14th, and was successful. But Clerfayt having turned his right obliged him to re-cross the Aisne at Vouziers, separated him from Dumouriez, and recaptured the position.

At the same time Dubouquet, assailed by the *émigrés* at Le Chêne-Populeux, was also cut from Grandpré, and thrown back upon Attigny and Châlons.

In a few days the situation had become critical. Reduced to 16,000 men, turned upon his left flank by 25,000 Austrians, and threatened in front by 40,000 Prussians, Dumouriez had lost the left of his line of defense, and ran the risk of seeing himself shut up between the Aire and the Aisne. The decision which he took under these circumstances was most remarkable.

He still resisted the advice to retire behind the Marne, convinced that the effect of this movement would be disastrous, and that in a level country, the Allies would draw great advantage from their numerical superiority, which in cavalry was especially marked.

The French commander decided to abandon the Châlons road to the Prussians, and seek only to guard his communications with Vitry, hoping thus to menace those of his adversaries.

Then, without loss of time, he ordered Beurnonville, who was at Rethel, to move up the Aisne to Sainte-Menehould; Chazot and Dubouquet to follow him; Dillon to defend La Chalade and Les Islettes to the

last extremity, and threaten the enemy's left wing by Passavant; General d'Harville, who was organizing the recruits at Rheims, to proceed with a small force to Pont-Faverger, upon the Suippe; and General Sparre at Châlons to move out to the east of this place. The arrival of reinforcements of national guards rapidly raised the last two commands to 10,000 men each. Finally, he urged Kellermann to hasten his march and rejoin him as soon as possible.

These dispositions made, Dumouriez broke camp on the night of the 14th, in very bad weather, crossed the Aisne, reached Autry, and, notwithstanding the alarm raised by the enemy's rear-guard, ascended the river as far as Sainte-Menehould, where he took position covering the Châlons road, his right on the Aisne, nearly opposite Neuville-au-Pont; his front upon the heights in rear of the villages of Maffrécourt, Braux-Sainte-Cohière, Valmy, and Dampierre; his left supported near the Auve upon ponds situated between this river and the Aisne. (*See Plate XXXVII.*)

The want of activity on the part of the Prussians gave Beurnonville and Kellermann time to effect a junction; and thus, on the 19th, Dumouriez had 70,000 combatants at his disposal.

The army of the Allies, convinced that we were beating a retreat, was set in motion on the 18th, debouched by Grandpré and Vouziers, reached the road from Suippes to Somme-Bionne with its advanced-guard on the morning of the 20th, and a short time afterwards that from Sainte-Menehould to Châlons.

On the evening before, Dumouriez had assigned Kellermann to position on the heights of Gizaucourt, to the left, authorizing him, in case of attack, to occupy the minor heights of Valmy, beyond the Auve. The latter, executing his march during the night of the 19th, moved upon Valmy, inclining thus to the right, and neglecting

the heights of Gizaucourt opposite those of La Lune, of which the Prussians were already taking possession. On the following day he saw the defects of his position, which exposed him to the danger of being thrown back upon the marshes of the Auve behind Valmy, and asked Dumouriez's support. The resulting movement led the Prussians to believe that a retrograte march in the direction of Châlons was being attempted, and decided them to attack.

In the meantime Dumouriez had directed Stengel with a strong division upon Mont-Yvron to support Kellermann's right; Beurnonville with 16 battalions to support him in rear; Chazot with 9 battalions and 8 squadrons upon the Châlons road to occupy Gizaucourt, and cover the left; and finally Leveneur with 12 battalions and 16 squadrons upon Virginy, *viâ* Berzieux, to menace the Allies' left. Kellermann had reinforced the centre of his position at Valmy by numerous guns.

A first engagement took place near Gizaucourt between the advanced-guards. Our soldiers were obliged to give way before superior numbers, and Gizaucourt was occupied by the Prussians.

Toward ten o'clock the fog having cleared, the action became general. The enemy's army formed in two lines, made three successive attacks upon our positions, well prepared for and supported by three batteries. At first our lines were shaken by the cannonade, and recoiled in disorder; but they were soon reformed, while the reserve horse-artillery, supported by other pieces near a mill which was on the line, replied to this fire.

Shortly afterwards, the Prussian columns moving in regular order, advanced upon the heights of Valmy, the left directed upon the village, the centre upon the mill, the right being in échelon in rear. Kellermann immediately formed his troops into battalion columns, and leading them forward with the cry of "*The nation forever!*" ordered a bayonet charge.

This movement decided the battle. Before our offensive, the heads of the enemy's columns hesitated, then halted, and finally retired. The Duke of Brunswick, fearing a reverse, had ordered a suspension of the attack. At four o'clock he resumed the offensive, but nothing came of it, and he finally returned his troops to their positions.

The action was ended; the Prussians were beaten. This engagement, insignificant as a battle, was characterized by a noisy cannonade and by offensive movements which scarcely outlined the prepared plan of attack. It cost each army only from 800 to 900 men. Its results were nevertheless considerable. It above all heightened the confidence of our troops, while destroying that of our adversaries. Dumouriez profited by it to arouse his ranks to new exertions. He rectified Kellermann's position during the same evening, assured his communications with Vitry and Bar-le-Duc, and held himself in readiness to repulse a new attack.

At the same time, the Prussian scouts had appeared in the vicinity of Rheims, and the Government, alarmed, implored Dumouriez to return toward Châlons in order to cover the capital. But far from allowing himself to be disturbed, he replied that the national guards at Rheims were sufficiently numerous to repel the uhlans, and that he would not leave his post on account of a few petty cavalry attacks.

"I have the advantage of position," he wrote, "whether our enemies continue to advance, retreat, or give battle."

On the 30th of September, indeed, the Prussians decided to retire. Their army was suffering severely from sickness and lack of food. Moreover, the King had just learned that the Russians, profiting by the situation, had entered into an arrangement with Austria for the invasion of Poland.

The retrograde movement began on October 1, and was carried on without molestation. It was for a long while believed that this was due to a secret convention between Dumouriez and the King of Prussia. However this may be, on the 21st of October our territory was freed from the foreigner, and our army resumed possession of the places that had previously been lost.

Comments.—The defense of Argonne, idealized by legend, has been compared with that of Thermopylæ, and in the popular mind this campaign appears as a heroic struggle in wooded defiles which the Prussians had vainly tried to force.

The truth concerning it is now well understood, and it remains to place a proper estimate upon its different incidents.

The study of the defensive operations of Dumouriez, taken as a whole, embraces the choice of a position, its occupation, its defense, and, finally, the results of the conflict.

The choice of position has set in clear light the energy and decision of the commander, who persisted in his combination, notwithstanding the contrary advice of his generals. His idea was simple: to occupy the first natural obstacle lying in the way of the enemy, and await his attack. Dumouriez's skill consisted in taking this resolution, notwithstanding the proximity of the opposing army, in profiting by the inaction of the latter, and in employing a dexterous manœuvre to mask the flank movement which he was obliged to execute.

But the first occupation of the line of defense was defective. It was not possible for the feeble French force to hold more than 50 kilometres. It was contrary to principles to attempt to defend all the passages; and in lieu of this, simple posts of observation should have been established, so managed as to furnish seasonable

notice of the approach of the enemy, and strong enough to oppose sufficient resistance to compel his deployment, and thus give time for the reserves to arrive. The latter should have occupied a central position in rear, and a principal reserve should have been so established as to be able to move rapidly to any threatened point, in order that the enemy might be struck with all the disposable forces.

History has given great importance to the evacuation of the defile of La Croix-aux-Bois. This was indeed followed by grave consequences; but it is certain that one of the five passages of the Argonne could have been forced at any time, if the enemy had concentrated his efforts there, after having made the customary demonstrations upon other points.

Considered in this light, the central position taken at the outset by Dumouriez, although naturally strong, was less advantageous than it seemed at first view. It could be easily turned, and as has been said, in this case exposed the forces occupying it to the most serious dangers.

It was quite otherwise with the combination adopted by the Republican general when he moved from Grandpré to Sainte-Menehould. We cannot help admiring the high qualities of the warrior, who, seeing himself outflanked, threatened upon his rear, separated from a portion of his troops, and importuned to beat a retreat, yet preserves his coolness, concentrates his forces, steals away by a night march, and takes up a good defensive position upon the flank of his adversary's line of operations, at the same time changing his own line of communications.

The cannonade of Valmy showed our young troops that even upon the defensive, it is by offensive movements that success is assured.

As to the operations following this action, they were so feebly conducted that an accusation of treason has, in

consequence, rested upon the memory of the victor. There is no doubt that we should have taken the offensive on the day following Valmy, beaten the Prussians a second time, pursued them without relaxation, anticipated them at the defiles, then at the bridges of the Meuse, and completed our success by decisive results.

But yet, France was saved, and after the terrors which she had experienced, every one rejoiced to extol the conduct and the talents of a general who had repelled the invasion.

It is to be observed that the topography of the Argonne was not dissimilar to that of the Vosges in 1870, and that in a certain measure, a system of defense such as Dumouriez adopted, could properly have found application at the commencement of our last campaign.

In the years following Valmy, the Vosges region became our theatre of defense, and our soldiers fought upon the same points as in 1870. The defensive operations of this period are, however, but little known. Habitual success upon the offensive has caused them to be overlooked. It is therefore proper to return to them to-day, and seek lessons from a past which, though glorious, was not entirely exempt from mistakes.

VI.—Defense of France in 1793 and 1794.

Campaign of 1793.—In this year, there was no concord in the defensive operations of our armies. It was the period of great national confusion. Our movements were noted for their feebleness, and also unfortunately for the repulses to which they led. Our forces were scattered, and not in condition to support each other. We successively lost Mayence, Valenciennes, and the Palatinate.

But on the 14th of August, Carnot was placed at the head of military affairs, and immediately impressed upon them an impulsion which marked him as a man of wisdom and determination.

"The most simple means," he wrote at that time to the Committee of General Defense, "of making art supply the place of numbers, so far as may be, is to make a war of masses, that is to say, to always direct upon the points of attack the greatest possible number of men and pieces of artillery, to require the generals to be constantly at the head of their troops in order to give them examples of devotion and courage, and to habituate both to make no account of the numbers of the enemy, but to fall suddenly and forcibly upon him with the bayonet, without thinking of making a contest of fire-arms, or of executing manœuvres in which the French troops of the present time have not been in any sense exercised."

Our military situation, while not being compromised, had yet at this time absolute need of an enlightened directing power.

In the North, the Allies had divided their troops and were besieging our frontier fortresses. Their efforts on this side were not of a nature, however, to awaken our fears.

In the East, Mayence having succumbed on the 25th of July, after an honorable defense, our armies of the Moselle and the Rhine, which had entered the Palatinate, were obliged to fall back upon the Sarre and the Lauter. Their effective still reached 60,000 men. A camp had been established at Neu-Hornbach to connect these two armies; but their leaders, left to themselves and discouraged, manœuvred separately and without reference to any common plan. The Prussians under Brunswick operated against the Army of the Moselle, and the Austrian contingents under Würmser were opposed to the Army of the Rhine. Together these two generals had 100,000 combatants at their disposal; but, fortunately for us, there was no harmony in their operations, and they lost precious time in trifling combats which remained without results.

On October 13, upon the order of the delegates of the Convention, the troops at the Hornbach camp took the offensive and marched upon Pirmasens, a strong central position which connected the two principal Allied armies.

This attempt was made by one division against superior forces upon unfavorable ground, which limited the action of our troops. The latter, turned by both flanks, were routed after a loss of 4,000 men and 22 pieces.

This defeat was followed by grave consequences; it became necessary to abandon the Hornbach camp and the Wissembourg lines. The Army of the Rhine retired upon Saverne, and that of the Moselle upon Sarreguemines. The Allies were able to seize Haguenau and to bombard Landau, while a plot was formed to deliver Strasburg into their hands.

Upon receipt of this news, the Committee of Public Safety nominated Hoche to the command of the Army of the Moselle, and Pichegru to that of the Army of the Rhine, ordering them to raise the siege of Landau. This combination violated the principle of unity in command, and our two armies, acting separately, were in the beginning of the campaign to see their chances of success materially diminish.

After his victory at Pirmasens, Brunswick moved upon Bitche; but not succeeding in taking it, he retired as far as Kaiserslautern, in order to assume an advantageous position and one suitable for the cantonment of his troops. (*See Plate XXIV.*)

Hoche having received, toward the middle of November, the reinforcements which he was awaiting (eight battalions furnished by the department of the Ardennes), moved forward from the Sarre on the 17th, with 35,000 men, to take the offensive. His project was to attack Brunswick, defeat him, and then move quickly to the

right in order to deliver Landau and threaten the communications of Würmser, who was in Alsace. But he lost several days in marches and countermarches while seeking and reconnoitering the enemy.

Finally, on the 28th, he directed three attacks upon the fortified positions which Brunswick occupied near Kaiserslautern. These poorly planned and disconnected attacks miscarried. Hoche renewed them on the 29th and 30th without success. On the latter day, Brunswick succeeded in repulsing our columns and flanking our left. He then took the offensive in his turn, and obliged Hoche to retreat; and notwithstanding the exhaustion of our troops, they reached Zweibrüchen and Hornbach in good order, thanks to Brunswick's inaction.

The Committee of Public Safety, appreciating the energy and tenacity of the new general, encouraged him instead of removing him from command. This confidence permitted him to redeem himself and to immediately repair his defeat.

"Hoche," says Jomini, "convinced that his efforts to save Landau by the Kaiserslautern route would be ineffectual, promptly changed his plan, and results showed the wisdom of his new designs.

"Seeing that his position extended very much beyond Würmser's right, and that the Army of the Moselle, reduced to the defensive upon the western slope of the Vosges, would be better employed by acting in concert with the Army of the Rhine against the Imperial army, upon the eastern slope, he decided to send General Taponier there immediately with his own and the Bitche division, forming together a force of 12,000 men.

"However wise the direction given these forces, this was only a half measure and a simple restitution of the reinforcements previously drawn from this army. We are left in ignorance of the motives which restrained Hoche from moving his entire army upon Wœrth, since

the places along the Sarre and the Moselle were sufficietly garrisoned, and by leaving seven or eight thousand men at Sarrebruck to cover his principal line of communications with Metz, he would have been able to march at least 25,000 men into the valley of Reichshoffen.

"What could Brunswick have accomplished upon the Sarre while 80,000 Frenchmen were crushing Würmser between Haguenau and Wissembourg?

"Such, no doubt, was the plan of the Committee in writing Hoche to join Pichegru; but it made the mistake of only suggesting instead of ordering the manœuvre."

In the meantime our Army of the Rhine, urged by the delegates of the Convention, had also taken the offensive and had obliged Würmser to fall back upon Haguenau, where he re-established his line behind the Zintzel and the Moder, from Reichshoffen to Bischwiller. The attacks of our troops, commenced on the 18th of November, were renewed with obstinacy on the 24th and the 26th, and the 1st of the following month. On the next day, the 2d, began a general struggle to dislodge the Austrians, which was continued on the 4th and 8th. Our troops had yet obtained but trifling advantages when Taponier debouched by Niederbronn, with his two divisions on the 8th.

The struggle re-commenced on the 14th and 15th, but our efforts, being poorly combined, were again unavailing. Finally, on the 18th, profiting by the bad weather, which made the enemy hesitate in his offensive projects, Generals Taponier and Hatry succeeded in forcing a part of his positions, between Niederbronn and Frœschwiller. Hoche, moreover, was to arrive in time to complete the victory. He appeared on the 22d with three divisions, attacked General Hotze at Reichshoffen, Frœschwiller, and Wœrth, captured several redoubts equipped with twenty guns, as well as the heights of

Liebfrauenberg, and obliged Würmser, two days afterwards, to retire behind the Lauter.

Hoche then assumed the duties of commander-in-chief, and, although the Austrians had finally succeeded in bringing their movements into closer connection with the operations of the Prussians, he soon pushed them beyond the Wissembourg lines, then forced them to raise the siege of Landau, and finally compelled them to recross the Rhine.

This campaign ended, then, by brilliant successes on the part of our armies.

Comments.—The events which distinguished the latter part of the year 1793 were not only a triumph for Hoche, but also a brilliant consecration of the efforts of Carnot. On the whole, the latter limited himself to prescribing everywhere an active defense, avoidance of isolated actions, concentration of the forces upon decisive points, and the attack of the enemy in such a way as to menace his communications. The combinations adopted were conformable to principles, and proved that by well ordered movements, a force beaten in the commencement of the year 1793 could, at the end, defeat its conquerors.

The attempt made upon Pirmasens in October would have led to the happiest results, if it had been undertaken with sufficient forces. It was, indeed, an operation similar to those which afterwards distinguished the campaigns of Napoleon.

Our columns, starting from a central position in the Vosges, followed an interior line, and sought to divide the enemies' masses in order to overcome them in succession. But to succeed in this, a numerical superiority was required, first of all at the point of attack, and then over the particular army assailed.

Hoche's repulse at Kaiserslautern shows the importance of this. Aided by the disposable troops of the

Army of the Rhine, the chances would have been favorable to beat the Duke of Brunswick, and then to overwhelm Würmser. Alone, he could only display his activity and give proofs of his high military qualities.

But when he moved into Alsace to join the Army of the Rhine, leaving the places on the Sarre to be held by simple garrisons, he drew to his side all the chances of success. Finally, it would be unjust to forget that at this period nothing equalled the ardor and tenacity of our soldiers. Beaten one day, they yet attacked the next. Victory must sooner or later come to recompense such courage.

The system adopted at this epoch for the defense of the Vosges, thus consisted, we see, in a concentration of the disposable forces upon a central position, and the assumption afterwards of an energetic offensive against the opposing army, in such a direction as to threaten its communications. The result of the campaign demonstrates the wisdom of these measures.

But we should not forget that the division of the forces of our enemies, the dissensions among the leaders, and their want of activity, contributed powerfully to our success. With an enterprising and resolute adversary, one knowing how to act in the midst of disunited forces, Hoche must have been beaten before having had time to effect a junction with Pichegru.

Campaign of 1794.—At the commencement of this year, our armies of the North and East were operating beyond the frontiers, and under conditions quite different from those which characterized the campaign of the preceding year. Pichegru had taken the offensive upon the Meuse, and had conquered Belgium. He was seconded upon the right, between Namur and Maestricht, by Jourdan, who commanded the Army of Sambre-et-Meuse. On this side we were soon to reach the line of the Rhine.

In the East, in the middle of the year, our Army of the Moselle found itself distributed on both sides of the Vosges from Sarrebruck to Landau, watching the movements of the Prussians, who extended as far as Germersheim.

In July, the Committee of Public Safety ordered the resumption of the offensive. Hoche was no longer there, and the operations gave evidence of the fact. A first attempt executed upon the entire Allied front, on July 2, was without result. Our forces had not been concentrated, and as a consequence, the attacks were partial and isolated.

Upon the advice of Carnot, it was resolved to act with greater unity; to seize the dominating heights of the Vosges in the centre of the enemy's positions, and separate thus the two Allied armies, defeating them in succession. This plan, which originated with Desaix, then a general of the Army of the Rhine, was to prove successful. While the right wing held the Austrians on the plain, the left vigorously attacked the troops of Hohenlohe upon the heights of Annweiler, seized these positions and forced the Prussians back upon Mannheim.

The Army of the Rhine then took post upon the Speierbach, while the Army of the Moselle seized Trèves and then returned to occupy positions in the centre of the Palatinate, which gave it command of the country.

Owing to these successes and to those which we had just gained in the North, our armies in November found themselves masters of the line of the Rhine from Basle to the sea.

The period of defense was now at an end. Our soldiers, in their turn, were going to carry the war into the enemy's territory, and until 1814, we were not again to see the foreigner.

At this latter epoch, the defense of the country was attended by altogether different circumstances. These

are generally well known, and it will therefore be sufficient to make a concise statement of the combinations which assured our successes, and the mistakes which led to our reverses.

VII.—Defense of France in 1814.—Second Invasion.

On the 21st of December, 1813, the Allied armies again crossed the Rhine, and the second invasion began. The formidable forces of our different enemies were divided as follows:

Armies of Silesia, Bohemia, and the North	340,000 men.
Contingents of the Confederation of the Rhine	140,000 —
Prussian and Austrian reserves	160,000 —
Anglo-Dutch forces operating in Belgium	25,000 —
Austrian army in Italy, and Murat's army	100,000 —
Siege corps for places on the Elbe and the Oder	120,000 —
Anglo-Spanish armies	140,000 —
TOTAL	1,025,000 men.

The weak forces at Napoleon's command were distributed in the following manner to resist these armies:

Defense of the Rhone basin (Augereau)	12,000 men.
Defense of the Rhine from Basle to Strasburg (Victor)	12,000 —
Defense of the Rhine from Strasburg to Mayence (Marmont)	10,000 —
Defense of the Rhine from Mayence to Coblenz (Ney)	18,000 —
Defense of the Rhine from Coblenz to Nimeguen (Macdonald)	13,000 —
Defense of Belgium (Maison)	12,000 —
Armies of Italy and Spain	150,000 —
TOTAL	227,000 men.

In reality, the foreigner was about to invade France with 500,000 men, and we did not have 80,000 with which to meet him. Nevertheless, Napoleon boldly determined to repel the Allies, and displayed a resolution worthy of the critical circumstances.

It was not alone the size of the forces of our enemies which made the defense difficult, but the choice of lines of invasion also contributed to this end. From the sources of the Oise to those of the Rhine, all the high-roads were to be occupied by the enemy, and it became impossible to cover so extended a line of frontier with the feeble effectives at our disposal. Moreover, time was wanting in which to bring together in the East the troops still dispersed on every side—in Germany, Italy, and Spain.

The gravity of the situation was indicated by Napoleon himself in the following terms:

"PARIS, January 12, 1814.

. . . . . .

"It appears that General Bülow is at Breda with a division of English militia and a cavalry corps. The aim of this force is either to overrun Belgium or to take Antwerp. . . . . It appears that General Blücher, with the Army of Silesia, has debouched by Coblenz, moved to Luxemburg, shelled Sarrelouis, crossed the Sarre at Sarrebruck, and is marching upon Metz. . . A third corps has advanced by way of Basle. . . . . It is apparent then that the enemy is preparing three principal attacks:

"One by his Army of the North. . . . . .

"The second by the Army of Silesia. . . . . .

"The third by the Grand Army, commanded by Prince Schwarzenberg, composed of the corps of Giulay, Klenau, Lichtenstein, Colloredo, and Wrede, and the Russian army under Wittgenstein."

After comparing the forces of the Coalition with his own, Napoleon explains, in the following manner, the defensive combinations which seemed to him to correspond to the exigencies of the moment.

Defense of France.—"The Duke of Taranto, with the

1st Cavalry Corps and all the other troops he can bring together, is to move upon Liège and Charlemont and threaten General Blücher's right flank, while at the same time guarding the Meuse. This marshal, with General Sebastiani, should be able to bring together 10,000 men with 40 guns, and, if the enemy should march upon Paris, he could arrive there before him.

"The Duke of Ragusa should have about 15,000 troops of all arms.

"The Duke of Belluno, about 12,000 troops of all arms.

"Finally, the Duke of Treviso, who is at Langres, about 12,000 troops of all arms.

"These four bodies, after retarding the enemy and disputing the ground should he make a decided march upon Paris, will be able to precede him there and take up a position in his front, where they will be joined by 60,000 men—the Guard and others. We shall thus have 100,000 troops around Paris, with the addition of 20,000 militia; and finally there will be in Paris in reserve sufficient arms for 30,000 men.

"We shall thus be able, toward the middle of February, to gather an army of 120,000 men before the capital, and at the same time have a garrison of 30,000 men in the place itself.

"In every view of the case, suitable measures of preparation should be adopted, and under no circumstances should the thought of abandoning Paris be entertained.

"It is necessary then to locate all the depots between Paris and the Loire, so that they may be completed at Paris; all the *cadres* for the troops of the military equipage trains, and also the artillery material, in order that we may have a great superiority over the enemy in this arm.

"Discreet engineer officers should make reconnaissance of all the heights to be occupied around Paris, as

well as the bridges of the Seine and the Marne, and should study the proper position to be taken by the army. By this means the militia at Paris, with sixty pieces, would be able to assure the city; the militia at Saint-Cloud and Versailles, the bridges of Saint-Cloud and Sèvres; the militia at Meaux, the Meaux, Corbeil, and other bridges.

"Resume.—To make no preparation to quit Paris, but if necessary, perish beneath its ruins.

"To direct the *cadres* from the fortified places upon Paris, in order to fill up the ranks with the conscripts due in 1815, and all others who may arrive, so that there will remain in these places only one battalion *cadre* for each 800 men.

"To forward to Paris all the men designed for the places of the Moselle and the Ardennes; and to establish at Paris large workshops for the manufacture of clothing and equipments, so that great numbers of men may be fitted out there.

"To bring together at Paris a thousand pieces of ordnance, two or three hundred thousand rounds of artillery ammunition, and eight or ten million cartridges. As soon as the Committee of Defense has presented its defensive project for Paris, and the Emperor has adopted it, there will no longer be inconvenience in accumulating war material there.

"The same thing must be done at Lyons, on a smaller scale: declare that the enemy shall never enter the city, form there a committee of defense, draw a hundred guns from Toulouse and Toulon, and take other corresponding measures.

"As soon as the plan is adopted, the Emperor will make it known, in order to give an impulse to the nation, and that each one may be convinced that every necessary measure will be adopted for the defense of Paris and Lyons."

On the whole, the project of Napoleon consisted in renouncing the defense of the frontier, in having all the distant detachments move slowly upon Paris, and in assembling all his disposable forces in a central position.

The defense of France was then to be centered around Paris and Lyons. This combination had the inconvenience of abandoning a vast territory to the invaders; but Napoleon regarded this measure as a necessity exacted by circumstances. He counted, moreover, upon the resistance of the capital and upon the patriotism of the provinces to lead the people to rise in rear of the enemy as soon as he had inflicted a defeat upon the latter.

While these dispositions were making, the invaders were pressing rapidly forward.

By the end of January, the Army of the North, formed of the corps of Bülow and Winzingerode, had re-taken Holland, traversed Belgium, and pushed back Macdonald by Aix-la-Chapelle and Liége upon Namur. (*See Plate XXXVIII.*)

The Army of Silesia, after passing the Rhine between Mannheim and Coblenz, had invested Mayence, and directed its left upon Nancy.

The centre had obliged Marmont to retire to the Sarre, and then to the Moselle, where he put himself into communication with Ney and Victor, who on their part had been repulsed.

Schwarzenberg's right, under Wittgenstein, had crossed the Rhine at Brisach, and traversed Alsace and the Vosges. Victor had attempted to stop it at Épinal and Saint-Dié; but too weak to effect his object, had fallen back upon Nancy, where he joined Ney. Both then retired behind the Meuse to Vaucouleurs.

The centre of the Allied Grand Army had advanced by way of Neuchâtel upon Besançon, Auxonne, Dijon, and Langres.

Mortier, at the head of a division of the Guard, had

endeavored to dispute the possession of Langres with this army; but being inferior in numbers, had been forced to evacuate the place and to retire upon Chaumont, then upon Bar-sur-Aube, and, after a bloody engagement, upon Troyes.

The left, commanded by Bubna, had advanced through Switzerland, occupied the Jura, and gained the Saône.

The design of these movements was to effect a union of the forces of Schwarzenberg and Blücher upon the Marne, and then to move them together upon Paris.

It is well known how Napoleon, having rallied his marshals at Châlons and Vitry, commenced, between the Seine and the Marne, that series of brilliant manœuvres which was to arrest the enemy for two months and to inflict such severe defeats upon him.

On January 27, Blücher's centre, being isolated from the other bodies, was beaten at Saint-Dizier.

On the 29th, Blücher, attacked at Brienne, was forced to retire to Bar-sur-Aube, but, nevertheless, effected a junction with Schwarzenberg on the 31st.

On the following day, February 1, Napoleon fought the desperate battle of La Rothière, with 36,000 men and 110 guns, against 132,000 Prussians supported by 280 guns. Beaten, he retreated upon Troyes, to await a favorable opportunity, which the armies of the Allies were not slow in offering him.

Believing that they had destroyed the last of our forces, these armies separated within a few days after this battle, and moved upon Paris by two distinct lines of operations, through the valleys of the Marne and the Seine.

Napoleon, assuring his communications with the capital, stationed himself between these two masses, and successively destroyed three corps of the Army of Silesia: at Champaubert on the 10th of February; at Montmi-

rail on the 11th; at Château-Thierry on the 12th; and at Vauchamps on the 14th.

Retiring then in order to unite his troops with those of Victor and Oudinot, whom Schwarzenberg had thrown back upon the Yères, he resumed the offensive against the Russians and Austrians, and inflicted upon them a succession of defeats,—at Mormans on the 17th of February, Montereau on the 18th, and Méry on the 21st,—which forced them back upon Bar-sur-Aube.

In the meantime Blücher had rallied his corps and moved upon Meaux. He was with great difficulty checked by Mortier and Marmont, who succeeded, however, in finally pushing him upon La Ferté-sous-Jouarre, then beyond the Marne, and in stopping him upon the Ourcq, after two desperate combats.

Napoleon, at this juncture, left Troyes in order to rejoin his two marshals, by Sézanne and La Ferté-Gaucher, and ordered the resumption of the offensive against Blücher, who retired in disorder upon Soissons. He thought to throw the latter back upon the Aisne, and destroy his army under the walls of this city; but the place, being poorly commanded, capitulated.

This act of weakness on the part of the commandant of Soissons decided, perhaps, the fate of the campaign. It permitted the Army of Silesia, already vanquished and decimated, to unite with the Army of the North, which had just reached Soissons, and thus to arrest Napoleon's pursuit. The latter was then obliged to modify his designs. He sought to turn the left of the new force before him, and threaten its communications with Belgium.

Notwithstanding his numerical inferiority, he defeated it at Craonne on the 7th of March, and pursued it as far as Laon, where he was forced to renounce the idea of triumphing with 30,000 young soldiers over 100,000 of the enemy, established in an impregnable position. Marmont, upon whom he had relied to turn this position,

having been overcome by superior forces and obliged to re-cross the Marne, the Emperor found himself compelled, as has been said, to give up all thoughts of dislodging the enemy from Laon. He moved then towards the Marne by Rheims, which he captured from a Russian division. He remained at this place for a short time to give his troops much-needed repose. In taking this direction, Napoleon still retained the power of manœuvring upon an interior line, and of separately striking whichever of the enemy's groups exposed itself first to his blows. Such an occasion soon presented itself.

Upon learning of his retreat to Rheims, Schwarzenberg, who for ten days had not dared to pass beyond Troyes, resumed his march, on the 14th, toward Arcis-sur-Aube; but the announcement of Napoleon's approach was sufficient to cause him to fall back as far as Brienne.

After six weeks spent in constant struggles, our enemies were but little farther advanced than when first reaching the Marne. Unfortunately for us, they now became aware of the feebleness of our effectives and the defects of their own combinations, and resolved to unite the armies of Silesia and Bohemia, and then resume the movement upon Paris.

The rendezvous was to be Châlons or Vitry. Schwarzenberg moved in this direction by way of Arcis, where Napoleon arrested him, disputing the passage of the Aube. Our army however was forced to retire before the largely outnumbering forces of the enemy.

Thenceforth the situation underwent a change ; the Emperor could not continue his system of defense without being shut in between the two opposing armies, each with a telling superiority of numbers. His victories, moreover, had begun to exhaust him.

It was then that he conceived the audacious project of moving by Saint-Dizier to the upper Meuse, assembling there all the reinforcements that could be drawn from

the garrisons of Lorraine and Alsace, stirring up the population, and finally cutting the enemy's communications.

This movement was commenced on March 22; but an intercepted dispatch betrayed it to the Allied sovereigns. The latter, confident in their strength, contented themselves with leaving a corps of observation in front of Napoleon, without modifying the direction of their march. The union of their forces had now the effect of separating him from Marmont and Mortier.

He was obliged therefore to renounce his new combination and assemble the remains of his forces at Troyes, in order to move upon the left bank of the Seine, and endeavor still to dispute possession of his capital.

Unfortunately it was too late. Hardly had he reached Fontainebleau when Paris capitulated. He thought then of transferring the defense to the Loire, and assembling there the troops of Soult, Suchet, Augereau, and Prince Eugene, forming thus a force of 150,000 men with which to manœuvre among the frontier places against the communications of the Allies, until they were forced to retrace their steps.

But by occupying Paris, they had broken his power. His will was no longer recognized as supreme in the State. The campaign was ended. The offensive of the foreign armies, seconded by an overwhelming numerical superiority, had triumphed over the most skillful defensive manœuvres.

Comments.—This brief statement of the events of 1814 will enable us to estimate the causes of the final result of this campaign. It also gives us an opportunity to judge of Napoleon's methods of defense.

He has been blamed, in the first place, with having fallen into an error for which he sometimes reproached his marshals—the scattering of his troops into isolated

groups upon the frontier. But when his correspondence is read, when the facts of the case have been thoroughly studied, it will be seen that this measure was demanded by circumstances. How, indeed, could he have had time to assemble his depot troops, the divisions in Spain, and the feeble resources at his disposal, if he had not retarded the invasion by opposing to it the remaining fragments of the old armies? It was the situation existing during the first days of 1814 which undoubtedly inspired the combinations actually adopted. We may to-day sum up the measures adopted for the defense of France in this inauspicious year as follows:

The abandonment to the enemy of the frontier zones and the lines of defense found there;

The slow and concentric retreat of the corps of observation posted upon the frontier;

The assemblement of the forces upon a central position between the frontier and the capital;

Offensive manœuvres upon an interior line of operations against any of the enemy's corps which can be assailed with advantage;

Continual and energetic attacks upon the weakest points presented by the adversary;

Rousing the inhabitants of the country in the enemy's rear;

And attempts made to cut his communications.

It was an essentially active defense, and would probably have been successful had it not been for the disproportionate forces.

VIII.—Third Invasion, 1815.

In the following year occurred the third invasion. This was a period more terrible still. The defense of France was limited to the adoption and partial execution of certain measures and to two battles, one of which ended in victory, the other in disaster.

In connection with the subject we are considering, the campaign of 1815 offers us another example of an active defense. The initiative of the movements was taken by Napoleon upon his northern frontier; and everything leads us to believe that, notwithstanding his feeble means, he would once more have been successful but for a tactical error which deprived him of an entire corps at a decisive moment.

As to the measures prescribed, it will be of service to recall them. Independent of the organization of the forces, they comprise:

The creation of three committees charged with organizing the defense of the Rhine from Landau to Hüningen, then of the Vosges, and finally of the Jura and the Alps.

The construction of fortifications upon all the frontier passages.

The protection of these works by the militia on the frontier.

The creation of four armies: of the North, the Moselle, the Rhine, and the Alps; and of three observation corps for the Jura, the Var, and the Pyrenees.

The preparation for defense of Langres, Dijon, Maubeuge, La Fère, Soissons, Château-Thierry, Saint-Quentin, Laon, Rheims, etc.

The formation of independent bodies in the frontier departments designed to operate upon the enemy's rear, in order to intercept convoys, couriers, and all stray men.

The absorption into the army of the militia of the interior.

The occupation of a position in lower Alsace, and another near Longwy, Thionville, or Sarrebruck,—these to be connected by Bitche.

Finally, the defensive organization of Paris and Lyons.

These measures were supplemented by instructions in which the following details were set out:

"*Instructions for the generals for the defense of the Vosges, the Argonne, the Jura, and the Alps.*

"PARIS, May 9, 1815.

. . . . . .

"Cases may arise in which the Vosges may become a retreat for the Army of the Rhine, and there may be others in which they may threaten the rear of the Army of the Moselle. I am waiting until the character of the war to be waged is more fully determined. The same holds true regarding the forest of Argonne.

"But it is important that for both these positions engineer and artillery officers be charged with reconnoitering and fortifying all the defiles.

"General Girard should then personally see to putting the Vosges in a state of defense; General Vandamme should do the same regarding Argonne; General Rapp should give his attention to the establishment of redoubts and fortified points along the Rhine; and General Lecourbe proceed in like manner respecting Belfort and all the passages of the Jura, etc."

. . . . . .

"*Instructions for the generals commanding territorial sections and the militia.*

"PARIS, May 12, 1815.

"The lieutenant-generals commanding military divisions will not shut themselves up in fortified places, each of which should have its own commandant; but it is designed that they, together with the marshals commanding departments, etc., hold themselves always within the limits of the military division, taking whatever position may be designated by the general-in-chief, in such a way as to hold the territory to the last, and to remain in condition to rouse the inhabitants, and to

otherwise retard the progress of the enemy as much as possible."

. . . . . .

The idea, then, was to conduct the defense always and everywhere with the greatest possible activity, energy, and obstinacy. Unfortunately, the defeat at Waterloo rendered these efforts of no avail. Nevertheless, the principles which were to serve as a guide for the defense of the country were clearly defined, and under similar cirsumstances, we had only to apply them. It remains to be seen how far this was done in 1870, in this still more unfortunate period, when, after six months of reverses, France was forced to see two of her most precious provinces wrenched from her, and to submit to Prussian occupation for four years following the invasion.

IX.—Defense of France in 1870-71.—Fourth Invasion.

At the beginning of this campaign, the idea of acting upon the defensive was not entertained. It was forced into view after the defeats of August 6, and found itself confronted by a defective concentration which was to exercise a fatal influence upon the course of events.

We have seen that this distribution of our forces in isolated groups upon a frontier of 260 kilometres [161 miles] was the result of neglecting first principles, of a false estimate of the duration of the German concentrations, and of an absolute error regarding the merits of the mode of calling out our reserves.

We have also seen that this distribution led to the successive disorganization:

At Wissembourg of a division of	8,000 men.
At Frœschwiller of a corps of	45,000 —
At Spicheren of a corps of	30,000 —
And to the demoralization of two corps, the 5th and 7th, about	50,000 —

It was thus the ruin of an army of 133,000 men.

What great advantage might these forces have been to us, had they been properly assembled!

Unfortunately, when the necessity for remaining on the defensive became apparent, it combined itself, in the mind of Napoleon III, with political considerations, no doubt legitimate, but yet unfortunate for the army. From this resulted the project of falling back upon Châlons, of concentrating the disposable forces there, and of relinquishing without further struggle the lines of the Vosges, of the Moselle, and of the Meuse and the Argonne. As in 1814, the defense of Paris seemed to dominate every other consideration. But the circumstances were different; the project referred to was abandoned, and, while the sovereign was moving in the direction of the capital, the Army of Metz was left upon the Moselle to follow its own course.

Supported by an entrenched camp which formed a double bridge-head, covered by a line of defense, with a force of 170,000 veterans commanded by brave and experienced leaders, this army had before it a wide and brilliant field for the combinations of an active defense. In keeping up its communications with the interior, it was sure to be provided with reinforcements and supplies. In attacking the enemy with vigor and obstinacy and with all available forces, upon one or the other bank of the Moselle, it was certain of inflicting sensible loss upon him and of arresting his progress. Being free to select its own ground and to choose the time of delivering battle, it might have aspired to success.

But it confined itself to a passive defense. From this followed the indecisive battles of August 14 and 16, our defeat of the 18th, the investment of our intrenched camp at Metz, a state of helplessness, a failure in our supplies, and lastly capitulation.

In the meantime a second army assembled at Châlons

and moved thence upon Sedan. In appearance this was an active defense, but in reality the majority of the soldiers composing this army had not for some time been in condition to take the field at all, much less to think of attacking the enemy. To rejoin Bazaine while avoiding the German forces seemed the single end held in view; and this was a passive rôle—a rôle no doubt enforced by circumstances, but one which could lead only to a catastrophe.

Up to the defeat at Sedan and the fall of Metz, the system of defense adopted was then without possible results, for it violated the principle of concentration of forces, and was influenced by political questions at the critical moment when military considerations should have been all-controlling; it neglected every combination of active resistance, and limited itself to passive defense, before an enemy full of confidence and resolution; and finally, it prescribed the initiative only for the purpose of attempting an operation upon an exterior, excentric line, while superior hostile masses were upon the flank and rear of the operating army.

After the fall of the Empire, the defense of France centred in the defense of Paris, and the first thought of the military authorities was to assemble there all disposable contingents. This was still the reverse of an active defense.

The capital, indeed, was about to be invested, and to assemble an army there was to deprive it of the power of movement.

Napoleon said in 1815: "Active troops should not shut themselves up in fortified places, but should take up such positions as shall permit them to hold the territory for the longest possible period," etc. In order to retain possession of the forts of Paris, it should have been sufficient to employ there only garrison troops and well-commanded militia with siege guns.

The investment, perhaps, could never have been completed, if the active forces in Paris had kept the field.

The rôle of an intrenched camp has always been to serve as a point of support in an active defense. The neglect of this principle was an error, and one aggravated by the determination to retain the seat of government there. The presence of the latter was to augment the passivity of the defense, and was in neglect of this lesson of experience, that a besieged city is only a fortress, which should have but a single chief, a military commander furnished with the absolute powers demanded by a state of siege.

In Paris, the application of this rule was a necessity, and the troops shut up for the defense of the city should have been drawn from the body of its population. A mass of two million souls should be capable of self-defense, not only behind breastworks, but in the open field. In 1870, the people of Paris displayed so much good-will, energy, and even heroism, that the most favorable results might have been expected from their efforts and their resistance. Did they not, without complaint, submit to sufferings which raised the daily death-rate to 6,000?

The principle of active defense, however, had its supporters, and it was under their impulsion that the attacks of Châtillon, Champigny, and Buzenval were made. The generals who so fearlessly exposed themselves to danger during these unfortunate actions, and who led their improvised soldiers upon the German positions, were the first to comprehend the obligation imposed by the circumstances of the case; but their efforts were unavailing against the tactical methods of the enemy, which were better suited to the requirements of modern war. This is a question to be examined further on.

While Paris was opposing a resistance to the enemy's

forces worthy of a better fate, the provinces, aroused by Gambetta's proclamation, dedicated their sons and all their resources to the service of their country.

Two combinations presented themselves, wrote the War Delegate—to move rapidly to the East and endeavor to cut the enemy's communications, or to march upon Paris. This was a return to active defense, and operations of this nature, skillfully prepared and directed to a common end, might give some hope of success.

Several considerations, however, presented themselves to modify these projects. With the untempered levies at command, it was deemed imprudent to attack the army of Frederick Charles, which had just triumphed at Metz; and by directing the troops of the new formation toward the East, it was feared that Bourges would be uncovered, and also Tours, the seat of the Delegation.

It was necessary then to confine the efforts of this force to an offensive movement upon the capital. This resolution taken, one portion of the disposable quota was assembled to the south of the Loire, hastily organized, moved upon Blois, and thence upon Gien, and from the latter place upon Paris, turning by both wings the Bavarian corps which occupied Orleans.

If the principles of active defense were observed, the same cannot be said of those relating to concentration of forces, and the use of a single line of operations. Nevertheless the numerical superiority of our young army was such that even these mistakes were not sufficient to prevent a success, although rendering it less decisive.

After the victory of Coulmiers, General d'Aurelle, notwithstanding his energy, returned to the plan of passive defense. The destitution of his troops, the feebleness of his organization, and the approach of Frederick Charles influenced his determination.

From this time the defense in the provinces was limited to struggles upon the Loire, and to the organization of isolated centres of resistance in the North and East.

After the recapture of Orleans on the 10th of December, by the forces of Frederick Charles, it seemed that the confidence of our leaders diminished. The project of a direct march upon Paris was abandoned.

The Army of the Loire, instead of reforming, was divided into two parts, one designed to cover Bourges, and the other to draw the victorious enemy toward the West.

The Delegation returned to the idea of making an attempt upon the enemy's communications, combined with the project of attacking the siege corps at Belfort. Thus while in the North a small army, skillfully commanded, executed various independent movements upon the active defense, while Chanzy's army in the West found it necessary to retreat, the 15th, 18th, and 20th Corps were re-formed and directed toward the East, first of all to re-take Dijon with the assistance of Garibaldi and Cremer, then to unite with the Bressole troops coming from Lyons and to march in a body upon the Werder Corps which covered the siege of Belfort.

This was undoubtedly an active defense, but it did not take into consideration conditions of time and place; it made cities the objectives; instead of at once directing a movement upon the enemy's masses, it decided upon an extended march toward the East, without preparing sufficient means of supply and transport. In a word, it was not properly contrived, and the rigors of the season in a difficult country were sufficient to exhaust the forces.

The defeat of the Army of the East has been attributed to the lack of order and rapidity in the transportation of its troops by rail. That this defect existed is true; but it is doubtful if, with a more perfect execution, the expedition could have reached more favorable results. Our young soldiers had conquered at Villersexel and Chenebier; this was doing a great deal. Yet, from a defensive point of view, was the raising of the siege of Belfort the first end to be attained?

On the other hand, should the generous efforts put forth by the armies of the North, the Loire, and the East have remained isolated? These questions naturally present themselves when we study the history of the last war.

Upon the whole, the lessons which it contains may be gathered even from the rapid glimpses already given.

This war presents:

At the outset, a general neglect of the principles of concentration: *after the first defeats*, the failure of our Alsace forces to retire upon their supports; the abandonment by the Army of Metz of the defense of the Moselle, the forfeiture of its lines of retreat and its freedom of movement; the adoption by the Army of Châlons of a faulty direction, without protection for its flanks and its communications; in a word, a passive defense unexampled in history: *in the second part of the war*, a return to the principles of an active defense; but in the midst of the most generous efforts, the commission of new offenses against the principles relating to concentrations, to simultaneity of efforts, to the choice of lines of operations, objectives, etc.

One of the most skillful generals of the National Defense, Chanzy, had vigorously protested against these methods, and advocated combined action on the part of all our forces against the army of investment. But these movements, directed from bases situated at the four cardinal points, would still have lacked that connection which Napoleon recommended as an essential condition of success.

These considerations give us an idea of the value of our defense in 1870, from a strategical point of view. We shall see later that these, however, were not the sole cause of our defeats, and that our tactical methods had perhaps the greater part in the continuity of our reverses.

The history of our national defense is, as we see, full of precious instruction. But it does not stand alone in this regard. Other peoples have, like us, been reduced to the defensive, and their operations also afford useful lessons of experience.

In this connection, the struggles of Austria in 1866 merit an attentive examination. At this period, her armies made two defensive campaigns, which led to very different results.

That in Italy gave rise to combinations which have already been considered.

It remains to examine that in Bohemia.

X.—Defense of Bohemia in 1866.

We have already noticed, in referring to the Austrian *projet* of operations in 1866, the military condition of this power at the beginning of March. Although war was inevitable, diplomatic relations between the future belligerents were still maintained.

Each hoped, in acting thus, to throw upon his adversary the responsibility for the events now preparing. This situation led to the assembling of a council of war at Vienna, charged with considering the line of conduct to be pursued relative to preparations for approaching hostilities. The resolutions adopted by this council had such an influence upon the operations, that it is proper to recall them.

1st. The defensive was adopted on account of political considerations.

2d. The concentration of the Army of the North was to take place in Moravia and not in Bohemia, because it was supposed that Prussia, being better organized, would be able to penetrate Bohemia before the assemblements were completed.

3d. The I. Corps, already in Bohemia, was to remain

there, in order to connect with the Saxon army, and the 1st Light Cavalry Division was added to it.

4th. The I. Corps, the Saxon Corps, and the Cavalry Division were to fall back upon the principal army, in case the enemy entered Bohemia in force.

5th. In the course of the operations, the Bavarian army was to unite with the Austrian army near Hof and Erfurth.

6th. Finally, the VIII. Federal Corps was ordered to concentrate at Mayence, to defend the Frankfort-Mayence line.

While the council was yet in session, the mobilization began.

Mobilization of the Army of the North.—This operation, decided upon before the rupture of diplomatic relations, was effected in three periods.

The first, from March 2d to April 12th, had reference only to the increase in the garrisons, especially at Vienna, Cracow, and Prague.

The second, from April 12th to 25th, was marked by the mobilization of the Army of the South and the field artillery.

The third, from April 26th to June 8th, witnessed the mobilization of the Army of the North, the organization of the war effectives, and the creation of the fifth battalions.

This mobilization, in reality, continued for three months, and was of the same character as ours in 1870, that is to say, the reservists were directed upon the points of concentration whither their regiments had been moved.

This tardiness in passing from the peace to the war footing, was not, however, the cause of the adoption of the defensive.

The mobilization was, indeed, commenced sufficiently

soon to have permitted the assumption of the offensive, if this had been desired.

Concentration.—According to the decree directing the formation, the Army of the North was to comprise seven army corps and five cavalry divisions. (*See Plate XXXIX.*)

The tables relative to the movements were dispatched to the different authorities on the 11th of May.

On the 20th the transport began.

On the 8th of June it was ended, all the corps being completed, and assembled upon the following points:

1st Corps	Prague.
2d Corps	Zwittau.
3d Corps	Brünn.
4th Corps	Müglitz.
6th Corps	Prerau.
8th Corps	Auspitz.
10th Corps	Blansko.

The 1st Division of Light Cavalry was at Prague with the 1st Corps.
The 2d Division of Light Cavalry was at Freudenthal.
The 1st Division of Reserve Cavalry was at Prossnitz.
The 2d Division of Reserve Cavalry was at Kremsier.
The 3d Division of Reserve Cavalry was at Wischau.

The corps were thus at distances from the Moravian frontier varying from three to seven marches; ten, twelve, and thirteen marches distant from the Bohemian frontier; and three or four from each other.

This was then rather the assemblement of the corps in the region to the south of Olmütz, than a concentration. Consequently, when hostilities were about to begin, a new concentration became necessary.

Protection of the Frontier.—While these assemblements were taking place, the commander-in-chief was engaged in devising means for the protection of the frontier. From the southern extremity of the province of Glatz

to Cracow, there was a distance of 200 kilometres to be guarded. This duty devolved upon three brigades of infantry and five regiments of cavalry, to which was added the garrison of Cracow, the entire force amounting to about an army corps and a division of cavalry.

An equal force was charged with watching the Bohemian frontier from the Elbe to the province of Glatz, upon a nearly equal front.

In this service, each brigade and each regiment of cavalry had the guardianship of a definite zone, but these troops were forbidden to cross into the enemy's territory.

On the 12th of May, Benedek took command of the Army of the North.

On the 19th, he was warned that strong forces of the enemy were already assembled in the vicinity of Görlitz, in Lusatia. The I. Corps was thereupon ordered to draw near this province.

In consequence of the issuance of this order, the 1st Cavalry Division was sent to Turnau, and three brigades out of four of the I. Corps were distributed along the frontier.

On May 27, Count Clam, fearing an irruption by the Prussian masses, asked permission to concentrate at Münchengraetz, and Benedek complied with his request, placing the 1st Cavalry Division under his orders.

As a consequence, the troops occupying Bohemia assembled behind the Iser.

Toward the 8th of June, however, the commander-in-chief, having decided to unite his forces before engaging, ordered Count Clam to take position along the line of the Iser at Jung-Bunzlau, to the south of Münchengraetz, connect there with the Saxon Corps, and then fall back upon the principal army.

These instructions led to new movements in Bohemia, which continued until the 19th, the date of commencement of actual hostilities.

At this time the Prussian armies were echeloned in three masses along the frontiers of Saxony, Bohemia, and Silesia.

The Austrian army occupied the positions already indicated. It was in readiness to take the field, and its effective reached:

In combatants, 215,000 men, 22,800 sabres, 736 guns;
In *rationnaires*, 283,000 men and 67,000 horses.

The operations were about to begin.

First Defensive Operations.—During the first days of June, Benedek was quite well informed regarding the positions of the Prussians. Conformably to the plan of operations, he had resolved upon a most active defense, and intended, as soon as practicable, to make a close concentration and then march at once upon the enemy. Unfortunately, the supplies were still incomplete, and the administrative services not fully organized.

In the meantime, the Prussians entered Saxony, and, on the 16th of June, took the initiative.

The Saxon Corps, in consequence of the system of operations adopted by its ally, was forced to abandon its country and retire into Bohemia. It effected its retreat with sufficient rapidity, and on June 20, its heads of columns marching toward the Elbe, had reached Chlumetz, between this river and the Iser, when an order from the commander-in-chief, modifying the dispositions already made, directed it to join the 1st Corps, and take position between Münchengrætz and Jung-Bunzlau.

These instructions seemed to indicate an intention on the part of Benedek to defend the line of the Iser. At all events, they occasioned needless counter-marches, which increased the fatigue of the troops, and delayed the concentration in Bohemia until the 25th of June.

To understand the reason for this change, we must return to the principal army.

A dispatch received the 16th of June from the Emperor of Austria, directed Benedek to act without delay. The latter responded by a statement of his projects. He still hesitated from lack of knowledge regarding the scope of the Prussian assemblements; but was resolved to move his army into Bohemia toward Josephstadt, if the enemy remained between Görlitz and Landshut. Eleven days would be required for this movement. If the enemy concentrated in Silesia, he could bring his army together near Olmütz in four days. He had prepared for the march on the first hypothesis, and given instructions for a preliminary concentration. He was certain of being upon the right bank of the Elbe, between Königinhof and Miletin, within thirteen days, ready to receive battle or take the offensive.

On the same day, the 16th, the concentration was ordered. It was to be terminated on the 20th, and the army was then to be moved toward Bohemia.

The object of the first movement was to establish three corps upon the railroad from Brünn to Zwittau:

The VIII. at Brünn, the III. at Zwitawka, the X. at Zwittau.

Three other corps were to be established upon the railroad from Prerau to Olmütz and Trubau. These were the VI. at Prerau, the IV. at Müglitz, the II. at Landskron.

Between these two lines, at Prossnitz and Kremsier, were two divisions of Reserve Cavalry.

Upon the whole, this change was of little consequence, but it nevertheless cost four days.

On the 17th, the Government apprised Benedek of the invasion of Saxony, announcing also that the enemy seemed to be approaching the Elbe. As to the movements upon the Neisse, they were so far only a demonstration.

Benedek hesitated no longer. Resolved to take up a

position upon the plateaus on the right bank of the Elbe as soon as possible, he ordered the execution of the flank march which had already been projected along the Silesian frontier.

The circumstances attending this operation were to place him in one of those critical situations, which, especially on the defensive, decide the safety or the loss of an army.

The March from Olmutz to the Elbe.—The army was formed into three columns, of the following composition:

Right Column.

1st Division of Reserve Cavalry;
X. Corps;
IV. Corps;
VI. Corps;
2d Division of Light Cavalry.

Itinerary: Müglitz, Landskron, Senftenberg, Reichenau, Solnitz, Opocno, Josephstadt.

Central Column.

III. Corps;
VIII. Corps;
General headquarters;
3d Division of Reserve Cavalry.

Itinerary: Abtsdorf, Wildenschwert, Wamberg, Tijnist, Smiritz, and Josephstadt.

Left Column.

2d Division of Reserve Cavalry;
Artillery Reserve.

Itinerary: Policka, Leitomischl, Holitz, and Smiritz.

This movement was covered by the II. Corps, which, from Landskron, moved its brigades between the right column and the frontier; then by the 2d Division of Light Cavalry, which, after the 26th, was to follow the right column and rejoin the army.

The corps were warned to be always ready for action, to connect themselves with the neighboring corps, and, in case of need, to make demonstrations to induce the belief that an attack was to be made upon Silesia.

The aim of this movement was to echelon four corps, by the 20th of June, upon a semi-circle passing through Josephstadt, Schurz, Königinhof, Miletin, and Horitz, with a division of cavalry upon each wing, and place a reserve corps at Horenowes, and the II. Corps upon the defensive *en crochet* to the north of Josephstadt, faced to the east, while throwing forward two cavalry divisions to watch the frontier.

Once in these positions, the commander-in-chief counted upon having time to rest his troops, then to move them to the Iser and take the offensive.

It was with this in view that he left the Austro-Saxon troops in position at Münchengraetz, but with orders, however, to fall back if attacked by superior forces.

On June 24, Benedek completed these dispositions, giving the command of this group to Prince Albert of Saxony, and marking out for him his part in the operations: "he was to oppose all attacks coming from the side of Gabel and Reichenberg."

The commander-in-chief thought he had thus provided against all contingencies; but the vigor of the Prussians, the rapidity of their marches, and especially the individual initiative of their leaders, were to precipitate events, and shorten the delays upon which he had counted. At this moment, an invasion could no longer be opposed by Gabel and Reichenberg. In accordance with the first orders received, the Bohemian troops had given up these two points.

It is now known, however, that Benedek, after the 20th, was acquainted with the Prussian movements.

His persistence in his combinations can then be explained only by his absolute confidence in the superiority of the Austrian army—a confidence shared by many others. The campaign of 1864 in Schleswig-Holstein had not opened the eyes of Prussia's allies.

But the events now about to happen were to demonstrate the danger of such errors.

Operations upon the Iser.—On the 23d of June, the Prussians entered Bohemia. On this day Benedek's columns arrived at Opocno, Wildenschwert, and Kunstadt. Cavalry patrols watched the defiles of the Riesengebirge.

In Bohemia, the Austrian outposts fell back, according to directions, before the heads of the Prussian columns, and abandoned thus, on the 25th, one of the passages of the Iser at Turnau. It was at this time that Benedek, still confident of the success of his plans, sent orders to the Austro-Saxon group to hold Münchengraetz and Turnau at any cost. This counter-order contemplated a complete change in the situation; and being issued after so much delay, its execution offered many difficulties. It was, moreover, to expose an important fraction of the army to an unequal contest with two of the enemy's armies; but it appeared essential that there should be no hesitation in the attempt to retake Turnau.

This enterprise led to the defeat at Podol, then to the combats at Münchengraetz and Gitschin, fought by the Austrians under unfavorable conditions. In a few days after these events, the defensive, on account of miscalculations as to times and effectives, saw itself reduced to a passive rôle which left but little hope of success.

Operations upon the Elbe.—The movements of the II. Army upon the Silesian frontier commenced on the 25th and 26th. The feeble detachments of Austrian scouts fell back and gave information of the invasion. From Trautenau, Skalitz, Reinerz, and Olmütz, numerous dispatches informed Benedek of the scope of the movement and the force of the enemy's columns.

But nothing was able to shake his decisions; he simply concluded that he must arrest the demonstrations announced upon his right flank, and that forces of moderate size would be sufficient for this purpose; hence that there would be no necessity to suspend his march on this account. Evidently, he did not believe in the appearance of an army on this side.

On the date above referred to, June 26, when the II. Prussian Army entered Bohemia, the Austrian Army occupied the following positions:

Troops of Observation.—The II. Corps and the 2d Light Cavalry Division at Senftenberg.

Troops on the March.—The III. Corps before Königgrætz, upon the right bank of the Elbe;

IV. Corps at Lancow, 6 kilometers to the east of Miletin;

VI. Corps at Opocno;

VIII. Corps at Tijnitz;

X. Corps between Jaromer and Schurz, upon the Elbe;

1st Division of Reserve Cavalry, Dolan and Skalitz;

3d Division of Reserve Cavalry, Wildenschwert;

2d Division of Reserve Cavalry, Hohenmauth and Cereknitz;

Reserve Artillery at Leitomischl.

The greater part of these corps, then, were within a day's march of the defiles of the Riesengebirge.

Upon learning that the enemy's columns emerging from these mountains were quite strong, and were menacing his right wing, Benedek directed the VI. Corps upon Skalitz and the X. upon Trautenau, in order "to cover the army's movement of concentration." His directions were "to march upon the enemy's forces with energy, if the occasion presented itself, but without pursuing them too far."

He sent to Vienna the following explanation of this measure:

"This disposition is but a momentary suspension of the offensive which I propose to take, as soon as the concentration of the army is effected, and I am informed with some degree of certainty of the position of my adversary, which I hope will be the case in a few days."

He did not yet, it thus appears, suspect the location of the Prussian armies. The urgent dispatches sent him on June 27th were not able to move him to a modification of his plans, and even the first combats were not sufficient to inform him of the true state of affairs. The defeat of the VI. Corps at Nachod would, perhaps, have changed his manner of viewing things, if the success at Trautenau had not tended to confirm him in his illusions.

However, the divisions engaged demanded assistance, and Benedek reinforced them by parts of two new corps, the IV. and VIII.

Finally, on the 28th of June, the day of the combats of Soor, Skalitz, and Münchengrætz, from all sides his attention was called to the exhausted condition of the troops, and to their need of rest. The impossibility of a march upon the Iser and of a subsequent offensive, at last became apparent.

It was necessary to return then to the idea of assembling the army between Miletin and Josephstadt. The situation would no longer permit any other attitude than a passive defense.

The troops which were falling back from Bohemia upon the Elbe, and those returning from the defiles of the Riesengebirge, were in reality recoiling before the adversary's columns. These were, so to say, marches in retreat, executed toward the indicated position of assemblement. But, in consequence of one of those delusions so often current during a campaign, the various forces thought themselves simply moving to the points of concentration.

The Army of the North, already beaten in detail, submitted to the influence of the initiative taken by its adversary. Forced to renounce its projects of active defense, it moved to a central position which offered its enemies a point of junction for their forces, and which obliged it to accept a defensive battle near Sadowa.

Its terrible defeat in this action (known as the battle of Königgrætz or Sadowa), on July 3, dispelled all illusions.

Comments.—What, now, from a defensive standpoint, were the causes of the lack of success in these operations?

The numerous researches to which these grave events have given rise, the discussions which they have provoked, and especially the views published by the Austrian staff, permit us to answer this question.

1st.—Selection of the Zone of Concentration.—The region chosen was about eight marches distant from the line intended to be defended, and twelve from the Iser, upon which Benedek hoped to commence active operations.

These distances were not justified by the necessity of having from eight to twelve days before him in which to raise the army to a war effective; they were simply the result of a desire to assure to the assemblements the protection of the fortified place of Olmütz. Now the

forces had, in consequence, to make a long flank march near the menaced frontiers, and thus lost the advantages of a rapid concentration.

The Austrian staff should have reasoned regarding the Prussians as did the latter themselves, that they would be obliged to assemble on two frontier zones, the outlets of which converged toward the upper Elbe. It would then have been led to adopt for its concentration a central position in rear of the points of junction of these converging lines, and within reach of these two frontiers.

The Elbe, in the vicinity of Pardubitz, offered it, in this regard, a line of defense protected by the fortified places Königgraetz and Josephstadt. An army assembled in this region would be within three marches of Silesia and five of Lusatia. It would then have been ready to take the field on 16th of June, as events proved, and in condition to make a timely movement in force upon the threatened points, without fatiguing the troops.

2d.—Information Regarding the Enemy.—One of the most serious causes of the lack of success on the part of the defensive was the unfortunate interpretation of information received on the subject of the enemy's movements and designs.

Upon reading the series of dispatches received by Benedek after the 20th of June, one can explain his decisions only by the low estimate which he had formed of his adversary.

The most precise and complete intelligence reached him by way of Vienna; and yet he must have made it subsidiary to the information received through his cavalry and other troops charged with watching the frontiers. Now the latter had orders not to penetrate Prussian territory; they could not therefore secure that contact with the enemy which alone could give value to

their observation, except from the date when they were attacked.

But even then the Austrian commander did not form an accurate idea of the movements of the enemy's masses.

On the 26th and 27th June in particular, he was certain of having upon his right flank, and within a day's march, columns strong enough to beat his isolated corps. The proximity of these columns should have restrained him from continuing his march. He should then have turned upon this new enemy with all his forces.

Upon this subject it has also been made clear by the Austrian general staff, that the defiles of the Riesengebirge should have been occupied by detachments, and fortified.

It is not at all doubtful that on the 26th June, Benedek was in position to engage the II. Army under the most advantageous conditions, on account of then occupying an interior line of operations with respect to the opposing armies.

3d.—**Distribution of the Forces.**—The Austrian army several times violated the principles relating to the concentration of troops: first, in leaving a group in Bohemia at the outset, and in posting other groups so as to require four days for their concentration; then in its march toward the west.

At the time, indeed, when the Prussian forces were moving across the Silesian frontier, and when Benedek thought it necessary to direct against their heads of columns, first the VI. and X. Corps, then the VIII., his masses formed four groups: one of from 60,000 to 70,000 men upon the Iser, one of three corps toward the outlets of the defiles, one of two corps upon the Elbe, and a fourth made up of the II. Corps and the 2d Light Cavalry Division. These various groups were not in

condition to concentrate for battle in a single day,—a principle which is absolute in its application after operations have once begun.

4th.—Want of Activity on the Part of the Defensive.—We have already seen that, in order to be of an active character, the defensive ought not only to set the different parts of the army in motion at opportune times, but above all it should be characterized by rapidity of conception and execution, which alone can counterbalance the advantages of the offensive.

These are the qualities of which the Archduke Albert gave such a remarkable example on the Adige at this same period.

The Army of the North, on the contrary, made it evident since its first formation that it was far from possessing them in the same degree.

Although the corps were all complete by the 9th of June, they were not able to put themselves in motion before the 16th, losing thus seven full days at a decisive period.

Before commencing their movement toward the west, these large units consumed four additional days in taking up their positions for the march.

Finally, the movement toward the Elbe was to occupy ten or eleven days, although seven should have been sufficient, as was made manifest after the battle of Königgrætz.

If these losses of time could have been avoided, it would not have been impossible for this army to have taken the initiative about the 16th of June.

On the whole, a defective plan of operations, the adoption of the defensive when it was possible to do otherwise, the choice of a zone of concentration too remote from the theatre of first combats, a dangerous dispersion of the forces, and especially a lack of perception in inter-

preting information received concerning the enemy, such were the general causes leading to the failure of the defensive.

XI.—Conclusions.

It cannot be demonstrated by the history of contemporaneous wars, viewed from a defensive standpoint, that there exist absolute principles governing this species of operations. As with the offensive, the measures in preparation for war rest entirely with the military authorities. Going beyond the combinations embraced in this preparation, we enter the region of the unforeseen; the force of circumstances is now all-controlling, and in order to take measures most necessary for the safety of the country, the leaders are forced to seek inspiration in events as they occur.

There follow, however, from the facts which have just been analyzed, certain general ideas whose application seems obligatory on all occasions. These ideas may be summed up thus:

On the defensive, still more than on the offensive, it is necessary to know exactly the duration of the mobilization and concentration.

The protection of the frontiers should be assured at the moment war is declared. The zone of concentration should be so chosen as to offer protection from the attempts of the enemy; consequently, at such a distance from the frontier as shall permit the assemblements to be completed.

The defensive should concentrate the greatest possible mass upon this zone, while avoiding a mixing of units.

When the forces of a country comprise several armies, it is advantageous to concentrate them in echelon, so that in case one mass engages in front, another may,

within a day's march, fall upon the flank of the enemy, reaching, if possible, his communications.

The lines of defense should be organized in advance, with a view to making the most energetic resistance, and to taking the offensive at a favorable juncture.

All the difficult passages should be fortified; and so far as possible territorial troops should be employed in guarding and defending them.

Defensive positions should be chosen upon the lines of invasion, and thoroughly organized.

The defensive should always be active. It must attack and renew its attack, even after repulses.

Obstinacy in the combat is more necessary for it than for the offensive. Its aim is no longer the simple defeat of the enemy, but his extermination.

An army upon the defensive must preserve independence in its movements, avoid shutting itself up in intrenched camps, utilize strongholds only as points of support, and march resolutely upon the enemy as soon as it is in condition to do so.

It is by concentrating and properly echeloning its forces, and by accumulating its reserves within reach of decisive points, that the defensive may aspire to success.

It should have but one line of operations, but if possible several lines of retreat.

Beyond these generalities, is it possible to specify more particularly the principles to be observed on the defensive?

Evidently not.

Passing these limits, we approach the uncertain and the unknown; we enter the domain of fancy.

However, since the events of 1870, some in France have sought to go further, and have asked what would be the best system of defense to adopt in a new Franco-German war.

There is nothing to indicate that in such an event we

should be reduced to the defensive. Such a fate could not befall us, unless our mobilization and concentration should prove more tardy than those of the adversary. Now these operations being prepared during peace with unlimited freedom of action, it cannot be admitted that their execution will be insufficient. This granted, the problem cannot be solved without giving ourselves up to suppositions, without reasoning upon hypotheses. It is then the more practical course to hold to the general principles which are the fruits of experience, and which have been herein enunciated.

Whatever may be the differences of opinion in the case, however, the works published on this subject are open to criticism.

One of them has proposed to effect the concentration of our forces as follows, in case of a defensive war:

1st. An army upon the Meuse, between Dun and Poix, before the passage at Stenay;

2d. A second army upon the borders of Lorraine, from Dun to Hattonchâtel, upon the right bank of the Meuse;

3d. A third army upon the Moselle or the Madon, before Point-Saint-Vincent and Épinal;

4th. Strong reserves upon the Aisne at Rethel and Vouziers, and upon the Meuse between Dun and Verdun.*

Our forces would thus be distributed upon a front of 180 kilometres, divided into four groups. From the right to the left would be a nine days' march. Should the rapidity of the enemy's concentration condemn us to a passive defense, and his principal effort be made upon a single point of this line, a part of our groups would be isolated and unable to participate in the struggle.

In case of an active defense, in order to march within

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*Essay of Major X—— upon the North-Eastern Frontier.

reach of the enemy, our forces would be obliged to adopt two lines of operations, and, in consequence, be exposed to separation, and defeat in detail.

This operation is opposed to the rules of experience. The idea of forming two masses, one before each frontier opening, with an intermediary army, is natural. But, if this plan does not include the possibility of these forces rendering mutual support within twenty-four hours, or, at the furthest, thirty-six hours, defeat is still to be feared.

Yet we should remember that all public discussion of questions relating to national defense is a danger. It serves but to enlighten the armies of our neighbors, and to arouse their attention. It prompts ideas and gives rise to projects having but one aim—the enslavement of our country.

Under these circumstances, silence is a duty.

END OF PART I.

SUPPLEMENTARY NOTES,

BY THE TRANSLATOR,

ON RECENT CHANGES IN EUROPEAN ARMIES.

AUSTRIA.

The Landsturm, organized by virtue of the law of June 6, 1886, is estimated at 441,122 men, officers included.

ENGLAND.

The "Army Estimates" for 1877–8 provided for a regular force of 221,082 men, officers included, organized into 148 battalions of infantry, 31 regiments of cavalry, 228 batteries, 57 engineer companies, and the usual accessory services.

FRANCE.

"By the law introduced on June 25, 1887, by General Ferron, forty-five battalions have been added to the forces actually with the colors."—[*The Balance of Military Power in Europe.*

GERMANY.

By virtue of the bill passed February 11, 1888, the term of service in the Landwehr has been extended from the forty-second to the forty-fifth year. It is calculated that this law adds about 700,000 men to the German war forces.

ITALY.

Under the law of June 23, 1887, her forces, officers included, reach:—

Permanent Army: With the colors, 265,889 men; Reserves, 630,582. Militia: Mobile, 379,908; Territorial, 1,313,793.

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